POPULATION AGEING AND RETIREMENT IN ITALY: AN ANALYSIS BY GENDER AND GEOGRAPHIC AREAS[1]

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1. Introduction

The steady reduction in births and the decreasing mortality rate, above all for older ages, have led to a deep change in the population's age structure. In particular, due to the increase both in the absolute number of elderly people in respect to the total population and compared to other subgroups, e.g. younger, and working population, a significant demographic ageing has been taking place in our country.

As a result, the Italian population is one of the oldest in the world and, as such, has started to address the issues related to the fast and increasing demographic ageing earlier than other countries (Golini, 2000). On the 1st January 2020, in Italy, elderly people (aged 65 or over) number about 13.8 million and represent 23.2% of the total population, while youngsters (aged 0–14) and the working population number 7.7 million and 38.0 million, respectively. This means that there are 179 elderly persons for every 100 young persons, and 36 elderly persons for every 100 working-age persons. On the 1st January 1995, instead, elderly people numbered about 9.4 million and represented 16.5% of the total population; youngsters and working-age persons numbered 8.4 and 39.1 million, respectively, i.e. there were 112 elderly persons per 100 young people and 24 elderly per 100 active persons. Population ageing, both in absolute and in relative terms, has intensified, is intensifying and, above all, will continue to intensify fast. In particular, we can expect a vigorous increase in the proportion of e elderly people in respect to the total population in the future – at least in the next 25 years and excluding migration dynamics – since childbearing-age women of the future are the current female children, who number less than the women of the preceding generations.

Population ageing, which has been the focus of both scientific and political debate at the national (e.g. Tomassini and Lamura, 2009; Golini and Rosina, 2011; Castagnaro and Cagiano De Azevedo, 2013; Galasso and Profeta, 2014; Reynaud *et*

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al., 2018) and international level (e.g. Rowland, 2009; Schoeni and Ofstedal, 2010; Reher, 2015; Grundy and Murphy, 2017; Leeson, 2018), can be considered as the century's demographic, social and economic phenomenon as well as the major issue in the country (Golini *et al.*, 2003). Nowadays, and for several decades, population ageing is an unprecedented challenge for the whole of society of all advanced development countries.

Indeed, with ageing, several imbalances in the organization of society emerge. In economic terms, the weight of ageing depends on pensions, since 'the social security burden will tend to weigh increasingly on a gradually decreasing number of workers' (Garibaldi and Makovec, 2000). Welfare systems have been facing and, above all, will face a deep crisis due to the longer lifespan and the increase in the elderly population and this requires a re-examination of our society structure and organization (Reynaud and Miccoli, 2019). This suggests investigating the elderly population as well as social and generational dynamics related to ageing.

Italy has been experiencing a greater ageing process compared to other European countries; also, such process has been uneven over time and across regions. In particular, the analysis at the NUTS (Nomenclature of Units for Territorial Statistics) level 1 – North-west, North-east, Centre, South, and Islands – shows that demographic evolution has run alongside the economic development of the referred areas. Overall, in the northern regions, industrial development started earlier than in the other regions, thus leading to a higher economic expansion compared to the Centre and the South (which are still the most disadvantaged areas of the country). As a result, in the North, where survival levels increased over the 80s and fertility decreased over the 90s, population ageing occurred earlier than in the central and southern regions (Golini *et al.*, 2003). In particular, the South has experienced a delay in population ageing due to the demographic transition process, which concluded later compared to the North. Indeed, up to the end of the 90s, Italian manpower in particular came from the southern regions, and only in the last decade, thanks to a rapid decrease in fertility, has the ageing of the southern population reached the values that had been registered in the North earlier (Reynaud *et al.*, 2018).

In the light of these observations, the aim of our study is investigating the composition of the elderly population, i.e. evaluating the role of non-retired elderly people by calculating, as a first step, the ratio between elderly persons who are given a pension and the entire elderly population by age, gender and geographic area. By comparing data on the 1st January 1995 with those on the 1st January 2020, we intend to examine the evolution of the retired subgroup of elderly people by gender and region.

In particular, the study focuses on the portion of elderly persons who do not receive a retirement income or other types of economic revenue – such as those from

estates – thus representing a group of inactive persons needing financial support, i.e., a potential burden for the whole of society.

Our hypothesis is that the share of retired individuals has been increasing over the years although the impact of ageing on society has not been as strong as expected. Let us consider the financial burden of retired women on the whole of society. On the one hand, it can be seen as increasing given the higher participation of women in the labour market compared to past decades. On the other hand, the burden can be seen as decreasing since women receive survivors' pensions later in time than in the past, given the increase in individuals' lifespan.

This suggests that the type of pension people receive plays an important role in this context. Therefore, in our study, we split people who are given a pension into two groups: those who exited the labour market and are given a work pension (because they have met the State pension age or because they have accumulated the required working years) and those who are in receipt of other types of pensions – such as the survivor's pension or Social Allowance – in order to examine the evolution of work pensions over time by gender and geographic area. In the following, the two groups are called 'Work Pensioners' and 'Other Pensioners', respectively.

2. Data and methods

We use the INPS (National Social Security Institute) database, which allows identifying not only persons who receive a pension but also their province of residence, their individual characteristics, and retirement features. As a first step, we group Italian provinces and regions in broad geographic areas according to the NUTS-1 standard, i.e., North-west, North-east, Centre, South, and Islands. However, for the south and islands we consider one category only, which is indicated as 'South', so that the analysis focuses on four broad zones. Also, we use ISTAT (Institute for National Statistics) data on resident persons on the 1st January 1995 and on the 1st January 2020, by age, gender, and geographic area. We consider the years 1995 and 2020 and, in order to calculate the number of retired individuals by age (we focus on people aged 65+) on the 1st January 1995 and on the 1st January 2020, we select those receiving a pension by year of birth, sex, and geographic area in 1995 and in 2020, and exclude those dying over the same years.

Therefore, to identify individuals who do not receive a pension requires considering the corresponding resident population by age, gender and geographic area net of those who are given a pension. The ratio between retired people and total population shows the burden of retired on the elderly as a whole, or on subgroups of

old people, such as those aged 70+ (or 75+). This allows conducting a descriptive analysis by gender and geographic area over the observation years.

We employ a multiple linear regression model to investigate the evolution of the rate retired/elderly by demographic characteristics and by distinguishing between work pensions and other types of pension.

The dependent variable is the log transformation of the proportion retired/elderly, while explanatory variables are age, gender, type of pension, and geographic area. To be clear, in Italy, work pensions can be split into two categories, i.e., 'Seniority Pension', that is due to people who have the required working years, and 'Old Age Pension', which is paid to those who have met the required State pension age.

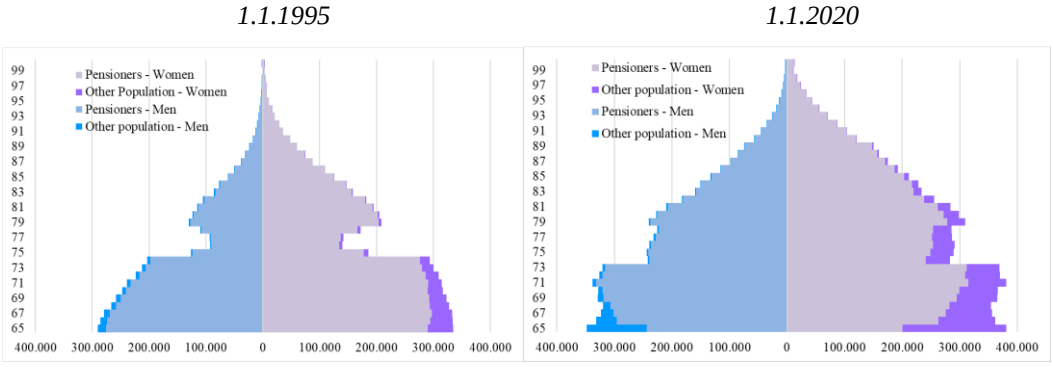
Also, the model controls for the observation year in order to show the changes that occurred over the considered time period (1995–2020). For the same reason, we calculate the interaction between the observation year and the explanatory variables.

3. Results

3.1 Descriptive results

Population distribution by age and retirement condition has been changing strongly, as shown by the age pyramids of the years 1995 and 2020 concerning the elderly persons only, i.e., those aged 65 and over (Fig. 1).

Figure 1 – *Elderly population by age, gender, and pension type.*



Source: our elaboration on ISTAT and INPS data.

The elderly population has dramatically increased and the proportion of people who do not receive a pension has risen as well, above all in the youngest age classes of the elderly persons group. This primarily depends on the changes that have

occurred in the pension system rules, directed to reduce the national pension expenditure. In particular, the minimum age that is required to receive Social Allowance – which is given to people who do not receive any income and to those whose income is lower than a certain threshold – was 66.7 in 2018 and 67 in 2019. This may partly explain the increase in the proportion of men and women aged 65 who are not given a pension.

Moreover, the increasing number of women who are not given any pension may be related to the higher male lifespan, which leads wives to receive the survivor's pension later than they did in the past decades.

In Italy, several current elderly women did not participate in the labour market during their life, or they were employed for very short time periods so that, at present, they do not meet the required conditions to receive a work pension. This suggests that often, women become 'retired' only thanks to the survivor's pensions that are given when their husbands die. Indeed, data show that in 2019, life expectancy in Italy was 81.0 for men and 85.4 for women (in 1995, instead, it was 74.8 and 81.1 respectively).

Looking at the total elderly population (people aged 65 and over), we can see that between 1995 and 2020, the share of retired individuals diminished for both men – from 97.1% to 96.0% – and women – from 94.1% to 86.1%. Instead, data on the portion of elderly population aged 70+ (or 75+), show that, over the observation period, the percentage of retired persons increased for men and decreased for women (primarily due to the higher male life expectancy compared to the past) (Table 1).

Table 1 – *Elderly population in receipt of a pension (%) by gender and age class.*

Age Class	**1.1.1995**		**1.1.2020**	
	Men	Women	Men	Women
65 +	97.1	94.1	96.0	86.1
70 +	97.6	96.3	98.7	90.2
75 +	98.1	98.5	99.0	93.0

Source: our elaboration on ISTAT and INPS data.

The analysis by broad geographic area shows deep differences between the North and the South, with the Centre presenting some values close to the southern ones. Over the observation period, the retired population aged 65 and over remained higher in the North than in the rest of the country although it declined in all areas, especially for women (Table 2). Overall, observed differences between the northern and the southern regions are greater for women than for men, and the values in the Centre are closer to those registered in the South (Table 2).

Looking at the retired people aged 70+ or 75+, instead, differences by region increased between 1995 and 2020 (Table 2).

Table 2 – *Elderly population in receipt of a pension (%) by gender, age class and broad geographic area.*

1.1.1995								
Age class	Men				Women			
	North-west	North-east	Centre	South	North-west	North-east	Centre	South
65 +	98.0	98.3	96.9	95.9	94.9	94.8	92.9	93.6
70 +	98.3	98.4	97.5	96.8	96.9	96.5	95.3	96.0
75 +	98.4	98.4	97.9	97.8	98.7	98.3	97.9	98.7
1.1.2020								
Age class	Men				Women			
	North-west	North-east	Centre	South	North-west	North-east	Centre	South
65 +	96.7	96.6	95.6	95.3	88.2	87.5	85.5	85.6
70 +	99.0	98.5	98.6	98.6	91.7	90.8	89.6	88.9
75 +	99.2	98.7	99.0	98.8	93.7	92.8	92.4	92.9

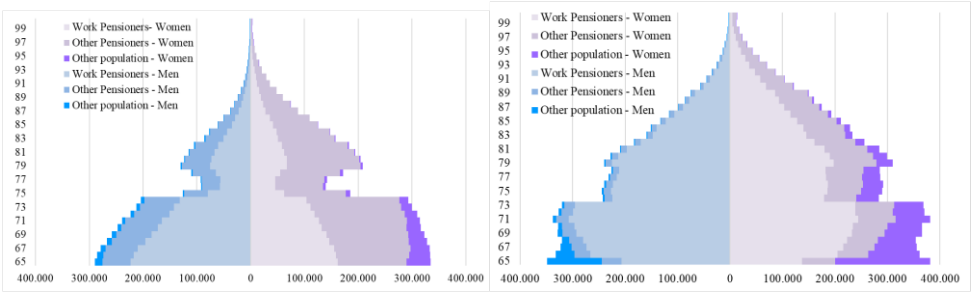
Source: our elaboration on ISTAT and INPS data.

The analysis of the evolution of the ratio between the elderly retired people and the total elderly population, requires the different existing pension types in Italy to be taken into account.

Data registered on the 1st January 1995 show deep gender differences: The proportion of women receiving a work pension is often lower than 50%, thus suggesting that most women are given another type of pension (Figure 2). In particular, for the oldest age classes, i.e., for women who were born in the early 1900s, such pensions may be represented by survivors' or Social Allowance. For men, instead, the share of those receiving a work pension was higher than the share of those who are given other types of pension. However, the percentage of individuals receiving other pension types was high and, in this case, the hypothesis is that a major role is played by Social Allowance.

In addition, for data registered on the 1st January 2020, differences by pension type emerge: Most of the men receive a work pension, and a reduction in the share of people in receipt of other pension types seems to take place over the observation period. For women, an increase in the group of those receiving a work pension took place between 1995 and 2020, although the share of those in receipt of other types of pensions continued to be high due to the limited female participation in the labour market – we are observing data on women who were born before 1955 – which is still characterized by significant gender imbalances.

Figure 2. *Elderly population by age, gender, and pension type.*



Source: our elaboration on ISTAT and INPS data.

3.2 Multiple regression model outcomes

In order to examine differences by gender, age, geographic area, and pension type, multiple regression techniques are applied. The model (Table 3) allows the detection of the association between each category of retired people and their burden on the elderly population as well as the interactions among variables. Almost all variables and their interaction are significant and the goodness of fit of the model is higher than 0.7.

Since we consider only two time points, the variable 'year' is a factor variable. In particular, the reference year is 1995, and results show that the variable 'year' is significant and positive, i.e., the proportion of retired people dramatically increased between 1995 and 2020, as already shown by the descriptive analysis.

As for gender, the coefficient is significant and negative, thus suggesting that the proportion of retired women is still lower than the percentage of retired men.

A positive association is observed for age: the higher the age the higher the proportion of retired persons in respect to the entire elderly population.

As for geographic area, results show that, despite the dissimilar economic structures of the north-western and the north-eastern regions, the labour market has not led to great differences in terms of share of people receiving a pension. The coefficient concerning the South, instead, is significant and negative: the percentage of retired people is still lower than in the North-west, while the coefficient of the Centre is negative and shows a lower significance level.

Table 3 – *Linear regression model coefficients.*

Variable	*Cat*	**Estimate**	**Standard error**	**Sig.**
Intercept		-2.060	-0.247	***
Year	*2020*	3.364	0.332	***
Sex	*Female*	-0.555	0.107	***
Age		0.022	0.003	***
Macro geographical area	*ref.: North-west*			
	Nord-east	-0.052	0.115	
	Centre	-0.202	0.115	.
	South	-0.322	0.115	**
Typology	*ref.: retired for employment*			
	Other retired	-2.546	0.122	***
	Other population	-3.213	0.122	***
Year*Women		0.231	0.081	**
Year*age		-0.037	0.003	***
Year* Typology				
	Other retired	-1.461	0.099	***
	Other population	-1.285	0.099	***
Sex * Macro geographical area				
	*Women *North-east*	0.024	0.115	
	*Women *Centre*	-0.118	0.115	
	*Women * South*	-0.290	0.115	*
Sex* Typology				
	*Women * Other retired*	1.581	0.099	***
	*Women * Other population*	1.629	0.099	***
Typology * Macro geographical area				
	*Other retired *North-east*	0.088	0.140	
	*Other retired *Centre*	0.740	0.140	***
	*Other retired * South*	1.278	0.140	***
	*Other population *North-east*	0.094	0.140	
	*Other population *Centre*	0.595	0.140	***
	*Other population * South*	1.013	0.140	***

R2 adjusted = 0.71
*Signif. Codes: 0'***'0.001'**'0.01'*'0.05'.'0.1''*
Source: our elaboration on ISTAT and INPS data.

Interaction between year and sex shows that the increase in the proportion of retired persons is higher for women than for men. The negative coefficient of the interaction between sex and South, however, shows that in this area of the country, the proportion of retired women is (still) low. Also, in the southern regions, the share of retired people who receive other types of pensions is larger than that of those receiving a work pension. This is found for the Centre as well, although results suggest the area is less disadvantaged compared with the South.

It is worth noting that the coefficients of the interaction between year and geographic area are not significant and have been excluded from the model. This may suggest that differences by area and age did not change over the observation

period. In our pension system, the proportion of the elderly population receiving a work pension – which depends on the number of people who have accrued the amount of work contributions that is required to receive a pension – has been increasing. However, differences by gender and geographic area still exist.

4. Discussion and conclusions

The study shows a significant change in the elderly population structure of our country. INPS data have allowed important information to be added to the study of ageing in Italy: The increase in the proportion of people retired from work shows there was a change both in the pension system and in our society's organization. This has led to a better sustainability of the high demographic ageing level: the elderly, who are given a work pension, by paying their work contributions, have partially contributed to the endurance of the pension system, while those receiving other types of pensions represent a burden for the system as a whole. Also, the work pension is usually higher than the other pension types, and this allows people exiting the labour market and receiving a pension to live autonomously.

However, the study shows important differences in population structure by gender and geographic area that need to be taken into account. In particular, differences by geographic area are not reducing, as our study shows. Women in the South are particularly disadvantaged in terms of pension receipt as well as in many life domains in our country. Although we will research this topic in more depth by identifying more pension types and by considering more than two time points, some observations can be formulated at this step of the research as well.

The proportion of retired people depends on labour market history, on new and old pension system rules, as well as on demographic dynamics – such as gender differences in life expectancy – and social behaviours – such as marriage intentions and decisions. The high ageing level of our country, which has led policy policymakers to try to cut pensions expenditures – has not reduced the proportion of retired people with respect of the entire old population for men. But this is not true for women.

Social and economic imbalances as well as demographic differences play a major role in this context. The reduction of geographic disparities – for instance, the economic development of the southern regions through the improvement of the labour market of this area – is needed.

Gender differences are expected to decrease due to the higher female participation in the labour market and their higher educational level compared with past generations. Also, the sustainability of the pension system requires an increase in the fertility levels of the country to avoid the number of people of new generations,

who will pay work contributions, being lower than the number of baby-boomers who will enter the pension system in the future.

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SUMMARY

Population ageing and retirement in Italy: an analysis by gender and geographic areas

Over the last decades, the increase in the share of the elderly people who exit the labour market thus receiving a work pension and the concurrent reduction in the workforce, has raised questions on the stability of the financial system of ageing countries.

Our study focuses on Italy and investigates the portion of elderly who are not in receipt of any retirement income or of other types of economic revenues, thus representing a potential burden for the whole society. We carry out an analysis by age, gender, and geographic area using INPS (National Social Security Institute) and ISTAT (Institute for National Statistics) data. The former allows the identification not only of persons who receive a pension but also their province of residence, their individual characteristics, and retirement features. The second provides information on the resident population by age, gender, and geographic area. We select people aged 65 and over and consider two time points, i.e., 1995 and 2020. A multiple regression model is employed to investigate the association between retired people by pension type and their burden on the elderly population. Results show that the old population structure significantly changed between 1995 and 2020 and confirm that demographic evolution has developed in relation to the economic development of the different Italian broad zones. Indeed, differences by gender and geographic area are detected: the share of men receiving a work pension is still higher than that of women, and this gap is more pronounced in the South compared with the North.

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