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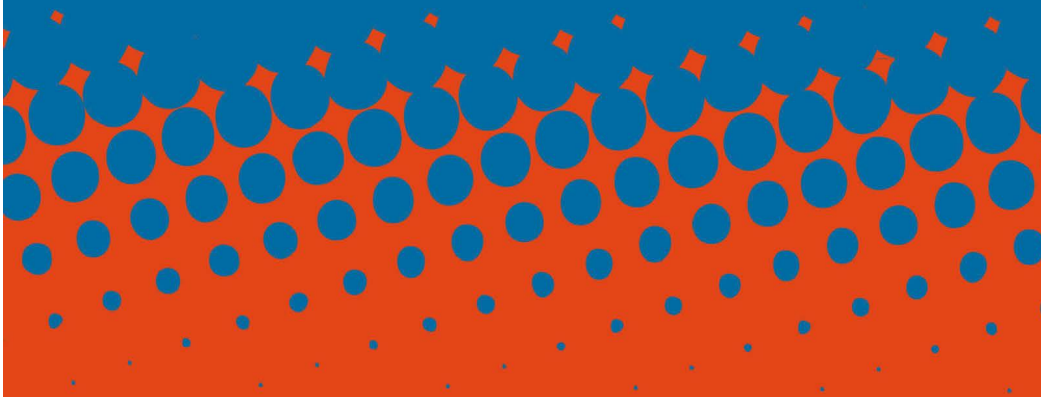
EQUITABLE AND SUSTAINABLE WELL-BEING IN ITALY



Health
Education and training
Work and life balance
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Safety
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Landscape and cultural heritage
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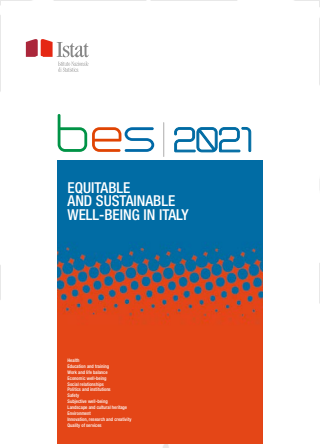
Quality of services



bes 2021

EQUITABLE AND SUSTAINABLE WELL-BEING IN ITALY

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Foreword

The Bes Report is an in-depth portrait of the state of the country, carefully portrayed by official statistics from the perspective of the well-being of its citizens.
Well-being is, or should be, the ultimate goal of policies.
A challenging, sometimes arduous goal, especially when circumstances are adverse: a devastating pandemic, an environmental crisis, threats to peace in Europe.
Created in continuity with the experiences of the influential Stiglitz-Sen-Fitoussi Commission of 2009, Eurostat's *Beyond GDP* programme and the OECD's *Better Life Index*, as a widely-participated project, the BES, with its indicators on Italy which have now reached the considerable figure of 153, represents a fine and comprehensive tool for measuring the degree to which policies actually produce changes in people's lives.
The data are organised in the major domains of health, education and training, labour, economic well-being, social relations, politics and institutions, safety, subjective well-being, landscape and cultural heritage, environment, innovation, research and creativity, and quality of services.
The BES project, which has led the country to have a continuously evolving system of measures of real progress, broken down by age group, gender, increasingly detailed territories, by educational qualification, makes it possible to give timely and comprehensive answers to the simple yet very difficult question, "What is life like in Italy?".
Above all, it makes it possible to highlight areas where inequalities do emerge and to identify the most disadvantaged groups, thereby addressing the demand for targeted policies on the basis of solid evidence.
The overall picture is rather complex and still overshadowed by the pandemic, both in demographic terms, with a significant reduction in life expectancy at birth in 2020 at the national level, which has reached dramatic peaks in some territories and, as far as the economy is concerned (one example for all is the sharp drop in employment in cultural and creative activities). In terms of the environment, there has been a reduction in CO_2 emissions as a result of the prolonged closure of economic activities and the reduction in $PM_{2.5}$ pollution, which remains, however, high and without significant improvement. Many gaps have been maintained, or even widened: from life expectancy at birth, which recovers to a large extent in the North in 2021 but decreases again in the South and Islands, to avoidable mortality, which remains higher in many Southern regions; from expenditure of Municipalities for culture, for which the territorial gap is markedly in favour of the Centre-North, to the impact of forest fires and illegal building, which is stronger in the Southern regions.
The pandemic has mostly resulted in the deterioration of well-being of the female population e.g., in levels of mental well-being and employment, especially for mothers with young children.

But it has also been the children, adolescents and the very young who have paid a very high tribute to the pandemic and the restrictions imposed to fight infection. They are the ones who require the greatest attention from policies today and in the years to come, and in this sense the data and corresponding indicators leave no doubt.
The psychological well-being of 14-19-year-olds worsened in 2021. The score for this age group (measured on a scale of hundredths) fell to 66.6 for girls (- 4.6 points compared to 2020) and 74.1 for boys (- 2.4 points compared to 2020).

In the pandemic years, the 14-19-year-olds experienced a significant deterioration in life satisfaction, with the percentage of the very satisfied falling from 56.9% in 2019 to 52.3% in 2021.
While dissatisfied adolescents with a low mental health score were 3.2% of the total in 2019, by 2021 this percentage had doubled (6.2%). This is about 220,000 14-19-year-olds who say they are dissatisfied with their lives and, at the same time, are in a condition of low psychological well-being. On the other hand, the same phenomena of bullying, violence, and vandalism by the very young - which took centre-stage in the news in recent months - are extreme manifestations of widespread and, perhaps, not transitory suffering and restlessness.
In this same age group, sedentary behaviour has risen from 18.6 to 20.9%, due to the inability of many to engage in continuous sporting activity. In addition, high proportions of alcohol consumers at risk were observed among 14-17-year-olds (23.6%).

Among young people, for whom peer relationships are of the utmost importance for harmonious development, satisfaction with relationships with friends has also tangibly decreased. The share of 14-19-year-olds who are very satisfied has lost 6.5 points in two years. Between 2019 and 2021, the proportion of 14-24-year-olds who say they meet up with friends at least once a week dropped from 89.8% to 73.8%. In this age group, the percentage of those who say they are very satisfied with their family relations also fell (- 4 points). It is not difficult to guess the reasons for this disaffection. In 2021, the prolonged difficulties for parents and children in sharing home spaces - even for working and attending classes -, the reduced possibility of spending time with study companions due to the alternation of face-to-face and distance learning for a good part of the school or academic year, the limitations in the possibility of doing sports and recreational activities have contributed to a sort of desertification of affection, which has eroded the foundations of young people's satisfaction.
The decrease (from 86.1% to 78.3%) in the share of 14-19-year-olds in the regions of Southern Italy - who say they have relatives, friends or neighbours they can rely on - is striking and disheartening. Above all, for young people in this age group the possibility of counting on friends has decreased from 78.4% to 74.8%.
Voluntary activity, which had remained stable in the first year of the pandemic, declined by almost 5 points among 14-19-year-olds in 2021. Between 2019 and 2021, social participation also fell sharply, by about 11 points in the 14-24 age group.

On the eve of the pandemic, Italy had not yet recovered from the deep losses in terms of the youth employment rate linked to the economic recession and it had increased the gap with the European average. In 2019, in fact, the employment rate of 25-34 year-olds in Italy continued to remain the lowest of all European countries, with a particularly wide gap for girls. With the arrival of the pandemic, the situation of young people in the labour market has deteriorated further, especially for women, whose employment rate has suffered the greatest losses.
Italy has a sad record in Europe for the number of young people between 15 and 29 years old who are no longer in education or training or even engaged in a job, known as NEET: *Not in Employment, Education or Training*. Another critical factor is represented by the high number of early leavers: the share of young people aged 18-24 who leave the education and training system without having obtained a diploma or qualification, also known as *Early*

Leavers from Education and Training (ELET), in 2021 was 12.7% in Italy, a higher value than the one set as a maximum limit at European level (10%), already reached on average by the EU27.
For the most educated and qualified young people, Italy still does not offer adequate opportunities. That is why, despite the restrictions on mobility imposed during the first year of the pandemic and the uncertainty that characterised 2020, emigrations abroad by young Italian graduates have intensified compared to 2019, in stark contrast to the transfers of residence of the population as a whole. The main directions of the flows of young graduates continue to be towards foreign countries and from the South to the Centre and North. The migration balance of Italian citizens aged 25-39 with a university degree closes with a balance of transfers of residence to and from abroad of - 14,528 units. In particular, the South and Islands lost 21,782 young graduates in 2020 alone.

Youth policies, in an ageing country like Italy, have rarely received priority attention and adequate resources. The picture provided by the Bes indicators suggests that it is time to change strategy. Outside any rhetoric, it can be said that policies for the welfare of young people are, today more than ever, policies for the welfare of the whole country. The interventions to be implemented cannot, by definition, be emergency ones, but, on the contrary, they must rebuild the structural foundations of the well-being of children and young people. Alongside a serious investment in the entire school and university system - not only for buildings or equipment, which in any case need to be brought up to acceptable levels of quality, but also and above all to support the employees and their skills - it is certainly essential to act to support and strengthen the networks of territorial services for culture, sport and leisure time to be lived as part of sociality and shared civic responsibilities. And, *last but not least*, the issue of employment, especially for young women, can no longer be postponed.
The opportunities offered by the National Recovery and Resilience Plan (NRRP) to systematically address this deep demand for change are unprecedented in the country's recent past.

Our hope is that policies will respond with intelligence, generosity and systematicity, making it possible, as early as the next edition of the Bes, for the indicators on well-being to measure a widespread improvement, especially for our young people, to whom we are socially and morally indebted.

Gian Carlo Blangiardo
President of ISTAT (National Statistics Institute)

Warnings

CONVENTIONAL SIGNS

The following conventional signs are used in the statistical tables:

Dash

(-) a) the phenomenon does not exist;
b) the phenomenon exists and is detected but there have been no cases.

Four dots

(....) the phenomenon exists, but data are not known for whatever reason.

Double dot

(..) for numbers not reaching half the figure for the minimum order considered.

Asterisk

(*) data obscured for the protection of statistical confidentiality.

PERCENTAGE COMPOSITIONS

The percentage compositions are rounded to the first decimal place. The sum of the percentage values calculated in this way may not be equal to 100.

GEOGRAPHIC AREAS

North

North-west	Piemonte, Valle d'Aosta/Vallée d'Aoste, Lombardia, Liguria
North-east	Trentino-Alto Adige/Südtirol, Veneto, Friuli-Venezia Giulia, Emilia-Romagna

Centre Toscana, Umbria, Marche, Lazio

South and Islands

South	Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria
Islands	Sicilia, Sardegna

Italy and the European context in the two years of the pandemic[1]

Over the last two years, the *COVID-19* pandemic has deeply changed many aspects of the daily lives of individuals, families, the organisation of society and the working world, bringing about new arrangements and continuous changes that, in turn, have affected health, education, work, the environment and services and, last but not least, the well-being of individuals. The report provides an overall picture of well-being over the two years of the pandemic, analysing each domain of well-being, and examining differences in its evolution between population groups and between territories. *COVID-19* has indeed had far-reaching consequences on the way people live, work and relate to others, but the impact varies depending on where people live, their gender, age and level of education.
In order to provide a complete picture of well-being in Italy, two years after the start of the pandemic, we analyse the system of indicators, subdivided into 12 domains, launched in 2010 by Istat together with Cnel to measure equitable and sustainable well-being. It consists of 153 indicators that have been adapted over time to the changes taking place, also making use of the introduction of new questions in existing surveys.
Thanks to this design work, as of 2021 the questionnaire of the Aspects of Daily Life Survey has been supplemented with new questions that allow us to deepen the analyses presented in this Report by monitoring new phenomena, such as the experience of distance or integrated teaching, with the quantification of attendance and assessment of the difficulties encountered by pupils, and work from home and its particular features. The new questions also respond to the need for more evidence to assess the impact of the pandemic on the economic well-being of households, by investigating the cash aid or loans that households have needed in the past year to meet expenses related to household needs, and the possible loss of income in the household as a result of *COVID-19*. As of 2021, information on the population's sense of confidence in new categories of practitioners and experts, such as physicians and other National Health Service personnel, and scientists, has also been enhanced.
Continuing with the innovations in terms of information content, the 2022 edition of the Aspects of Daily Life Survey, which is currently in progress, has included a new set of questions on *sentiment* towards democracy, in order to capture any changes over time that might prelude intolerant social climates that are particularly negative from the perspective of the citizens' well-being. The indicators will be included in next year's Bes Report by introducing a special domain.
Another key aspect for the analysis of well-being is the deepening of the territorial analysis, with the need to expand the set of indicators available also at the sub-regional level. In particular, in order to have a higher number of indicators, also of a subjective nature, at a finer territorial level, a set of questions on well-being has been included in the Permanent Population Census from 2022. This will provide data on life satisfaction, frequency of internet use, people one can rely on and crime and sense of safety in the area where one lives.

Also in terms of the quality of production processes linked to well-being and sustainability measures, the work of organising the indicators of the BES system, the SDGs and the BES

1 This chapter was edited by Romina Fraboni and Alessandra Tinto, with contributions from: Luisa Frova, Francesco Grippo and Laura Iannucci.

of the territories into an integrated database has been further extended, with considerable advantages in terms of harmonisation of the databases and metadata, as well as of the procedures for processing, monitoring and dissemination of the indicators of the three systems.

Well-being outcomes have been called a "moving target" by the OECD, especially during pandemics. Often, the assessment of the annual average hides significant differences, when, for example in Italy, in a year such as 2020 we have gone from a situation of "normality", to the March lockdown, to the summer re-openings, and back to the autumn restrictions.

In this context, it is more useful than ever to have timely and frequent data. In response to this emerging need, the European Statistical System has made considerable efforts to ensure the continuous production and dissemination of statistics, both with timely mortality data and with an investment in expanding the quarterly production of socio-economic indicators, to track economic and social developments during the recovery from the pandemic in Europe. The collection of this information, started in 2022, will make it possible to have even quarterly data on subjective well-being and economic conditions of households from the next Bes report.

The difficult situation brought about by *COVID-19* has affected all European countries, but with different intensities and different trends over time. In the following paragraphs, we will focus on the description of the development of the pandemic and the resulting employment crisis, with the aim of providing an overview of the context of these last two years in Italy and the rest of Europe. It is these two aspects - the health emergency on one hand, and the employment crisis on the other - that have seriously conditioned the last two years, leading to strong repercussions on the well-being of individuals. The comparison based on some key indicators allows us to highlight Italy's position in the European context in terms of gaps.

An analysis of the trend of the pandemic is offered by examining its effects in terms of excess mortality and drop in life expectancy. The situation in Italy is compared with that in Europe and with the countries that together with Italy make up two-thirds of the European population: Germany, France, Spain and Poland. In addition, the employment crisis that has accompanied the health crisis will be examined, paying particular attention to young people and gender differences.

1. Evolution of life expectancy and excess mortality in 2020 and 2021

In 2020, life expectancy falls in most European countries. Italy remains at the top of the ranking but loses a few positions

After decades of continuous increases in average life expectancy in Europe[2], in 2020 the impact of the increased mortality risk due to *COVID-19* led to a substantial decline in life expectancy at birth in most European countries, with 1.6 years lost in Spain, 1.2 years lost in Italy and Belgium, 0.8 in Sweden and 0.7 in France. The decrease is particularly marked in many Eastern European countries (- 1.5 years in Bulgaria and - 1.4 in Poland, Lithuania

2 The only exception was the slight decrease in 2015, due to particularly virulent and more fatal influenza events for those countries with a high prevalence of frail elderly people such as Italy, but also for France, Spain and Germany. The loss was 0.3 years on average and 0.5 in Italy, where the decline was already recovered in 2016.

and Romania), which started from low life expectancy values in the pre-pandemic period. The years lost in Italy and Spain, at the top of the European ranking of life expectancy at birth, resulted in the loss of some positions. For males, Italy, second in 2019 after Sweden, dropped to fourth place in 2020, while Spain dropped from fourth to sixth place. The biggest drop for males in the countries at the top of the ranking was in Italy and Spain (which, with reductions of -1.3 and -1.4 years, moved down to a life expectancy of 80.1 and 79.7 years respectively). Even for females, Italy moved from third to fourth place (with a life expectancy at birth of 84.7 in 2020, -1 year comparing to 2019) and Spain, with a loss of 1.6 years, passed to the second position (85.1 years of life expectancy in 2020), overtaken by France (85.3). In neither of the two countries, such loss has ever been observed in the last 50 years.

To analyse mortality trends over the two pandemic years through international comparisons, it appears preferable to look at statistics on overall mortality, as those based on deaths caused by *COVID-19* may be affected by differences in the procedures for measuring this phenomenon in different countries while data on total deaths are generally reported in a more standardised manner.

To provide a tool for monitoring deaths in European countries during the pandemic, in support of European policies and research, Eurostat has made available, as of April 2020, very timely information on the weekly number of deaths. Data on total weekly deaths, transmitted by national statistical offices to Eurostat on a voluntary basis, are available by gender, five-year age groups and NUTS3 region for almost all countries. In addition to data from the pandemic period, time series of weekly deaths have also been made available, often since 2000, to make time comparisons and to compare excess mortality to the pre-pandemic period.

Estimates of excess mortality are useful to understand the impact of *COVID-19*, not only on deaths directly attributable to the virus, but also to account for indirect mortality, related to the interruption and partial functioning of health services that had to cope with extraordinary conditions, and broader economic, social and behavioural changes in the population[3].

Italy, the oldest country in Europe

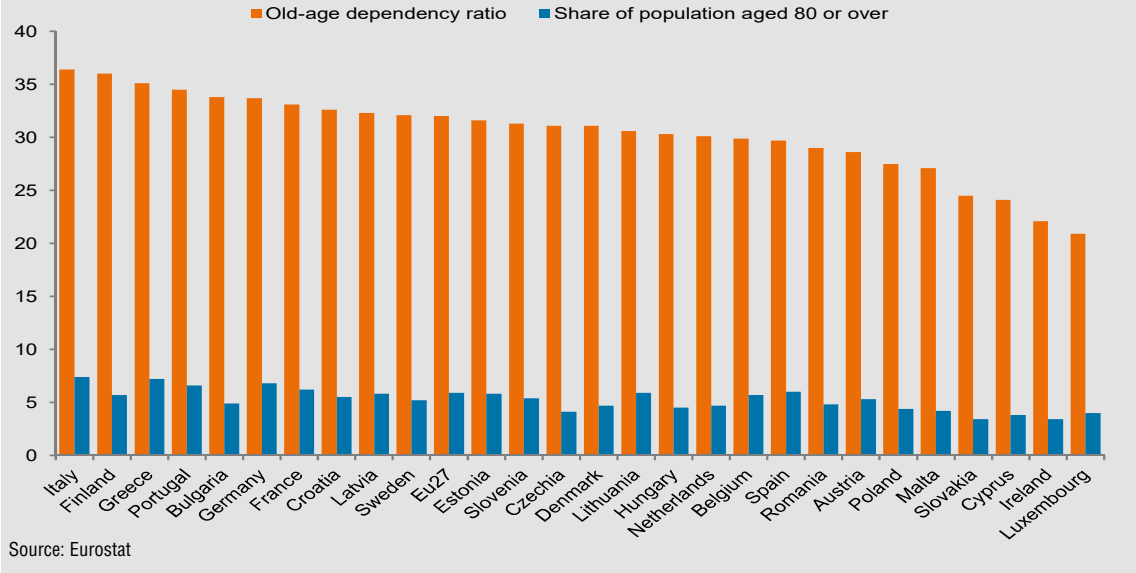
As is well known, excess mortality is usually calculated on the absolute numbers of deaths. However, in order to take into account of the differences in the age structure of the populations of the European countries, in this section, the analysis is based on the age-standardised mortality rates[4]. In fact, as can be seen from Figure 1, the old-age dependency ratio

3 Kaczorowski, J., and C. Del Grande. 2021. "Beyond the tip of the iceberg: direct and indirect effects of COVID-19". *The Lancet Digital Health*, Volume 3, Issue 4: E205-E206; Morgan, D. et al .2020. "Excess mortality: Measuring the direct and indirect impact of COVID-19". *OECD Health Working Papers*, No. 122. Paris, France: OECD Publishing. https://dx.doi.org/10.1787/c5dc0c50-en.

4 The standardisation of the rates was carried out by the direct method, i.e. by multiplying the age-specific rates calculated for five-year age classes (starting with the 0-4 age group with the last open class of 85 years and older) by the weights of each age class according to the 2013 European standard population and summing the products obtained. In this way, standardised rates were calculated in each week of the period 2020-2021 (week 1 to week 52, the calculation was not performed for week 53 in the year 2020) and overall for each of the years 2020 and 2021. These rates were then compared with the average rates for the same week or the entire year of the period 2015-2019, calculated using the same standardisation method. The percentage change from the average rate of 2015-2019 was used as a measure for comparing the rate with the previous period. The denominators for the calculation of the (exposed) weekly rates were obtained by summing for each week from the population on 1 January of each

(i.e. the percentage ratio between the population aged 65 and over and the population of working age 15-64) and the percentage of the population aged 80 and over range from the highest values observed in Italy (36.4% and 7.4% respectively) to the lowest values in the youngest countries, such as Luxembourg, with the lowest value of the dependency ratio (20.9%), and Ireland and Slovakia, with the lowest percentage of the population aged 80 and over (3.4%).

Figure 1. Old-age dependency ratio and proportion of population aged 80 years and over in the Eu27 countries. Population at 1st of January 2020



Source: Eurostat

In 2020, mortality in Italy was among the highest in Europe, but among the lowest when adjusting by age

When looking at the raw mortality rate, Italy, with 1,236 deaths per 100,000 inhabitants, was among the countries with the highest number of deaths per inhabitant in 2020, compared to the European average of 1,161 deaths per 100,000 and to neighbouring countries, 986 in France and 1,031 in Spain (Table 1). However, the high Italian mortality is largely the effect of the higher proportion of elderly people in Italy. In fact, considering the standardised mortality rate, which eliminates the differences in the age structure between the various countries, Italy is among the last places in the European mortality ranking with a value of 933 deaths per 100,000 inhabitants against an EU27 average of 1,040. Italian values are slightly higher than those of countries such as France (852), Sweden (888) and Spain (899). In 2021, the death rate in Italy was 1,173 per 100,000 inhabitants, which is slightly lower than the European average of 1,190. The standardised rate decreased compared to

year, the average weekly change in the population between the reference year and the following year: for year y: 1/52*(population on 1 January of year y+1 - population on 1 January of year y). Ireland was excluded from the calculation of standardised rates for Europe (EU27), as data on deaths were not available, and Germany was excluded only for ages 0-39 as deaths were not available for this age group. Only for Romania deaths in week 52 of 2021 were not available, so, to obtain the complete series, the deaths in that week were estimated equal to those in the previous week.

2020 and was 876 deaths (the EU27 average was 1,052 per 100,000).
If we consider the population aged 65 years and over, Italy maintains, both in 2020 and in 2021, standardised rate values lower than the European average (respectively 4,198 and 3,098 deaths per 100,000 inhabitants in Italy compared to 4,486 and 4,494 in EU27), overtaken by Germany (4,378 in 2021); the rates of France and Spain are, instead, more contained (respectively 3,550 and 3,574 in 2021).
In the younger population, aged 0-64, Italy is the country in Europe with the lowest levels of mortality (the standardised rate is 142 deaths per 100,000), after Sweden (120).

Table 1. Raw and standardised mortality rates for EU27 countries and age groups. Years 2020, 2021 and average 2015-2019 (a)**. Values per 100,000 inhabitants**

Territory	Raw mortality rates (per 100,000 inhabitants)				Standardised mortality rates (per 100,000 inhabitants)					
	Total		65 years and over		Total			65 years and over		
	2020	2021	2020	2021	2020	2021	Average 2015-2019	2020	2021	Average 2015-2019
EU27	1,161	1,190	4,713	4,723	1,040	1,052	986	4,486	4,494	4,208
Belgium	1,092	970	4,904	4,221	1,030	912	938	4,543	3,953	4,056
Bulgaria	1,776	2,162	6,517	7,803	1,723	2,056	1,560	7,119	8,421	6,435
Czech Republic	1,195	1,295	5,018	5,312	1,294	1,368	1,181	5,679	5,911	5,114
Denmark	931	978	3,997	4,161	959	984	1,006	4,243	4,371	4,409
Germany	1,173	1,220	4,614	4,738	....	....	....	4,311	4,378	4,324
Estonia	1,180	1,406	4,705	5,572	1,119	1,311	1,155	4,578	5,397	4,721
Greece	1,219	1,348	4,745	5,136	967	1,059	950	4,199	4,550	4,107
Spain	1,031	950	4,554	4,085	899	820	815	3,970	3,574	3,562
France	986	976	4,060	3,942	852	838	820	3,628	3,550	3,446
Croatia	1,395	1,552	5,529	6,024	1,327	1,450	1,287	5,774	6,285	5,559
Italy	1,236	1,173	4,762	4,443	933	876	853	4,198	3,908	3,802
Cyprus	710	772	3,627	3,896	912	966	937	4,068	4,327	4,239
Latvia	1,503	1,812	5,692	6,783	1,410	1,667	1,426	5,642	6,683	5,622
Lithuania	1,540	1,679	5,938	6,480	1,440	1,550	1,375	5,726	6,222	5,427
Luxembourg	726	704	4,126	3,875	907	864	887	4,045	3,806	3,915
Hungary	1,431	1,589	5,667	6,087	1,484	1,620	1,424	6,147	6,578	5,833
Malta	776	772	3,541	3,481	879	851	874	3,907	3,780	3,865
Netherlands	958	970	4,247	4,205	995	987	953	4,496	4,428	4,264
Austria	1,005	1,006	4,519	4,429	976	966	926	4,340	4,263	4,077
Poland	1,249	1,370	5,316	5,633	1,358	1,459	1,205	5,667	6,020	4,909
Portugal	1,188	1,207	4,587	4,599	990	989	953	4,291	4,284	4,112
Romania	1,531	1,744	6,193	6,919	1,600	1,796	1,464	6,507	7,297	5,941
Slovenia	1,131	1,090	4,765	4,446	1,075	1,020	976	4,777	4,463	4,217
Slovakia	1,066	1,322	4,888	5,875	1,332	1,604	1,300	5,640	6,728	5,443
Finland	996	1,028	3,810	3,897	902	911	929	3,902	3,968	4,025
Sweden	912	847	4,093	3,760	888	817	875	4,059	3,707	3,955

Source: Istat, Elaboration on Eurostat data
(a) Provisional data. The European average does not include data for Ireland because they are not available, while for Germany data are considered only for ages 65 and over, as deaths for ages 0-39 are not available on the Eurostat DB.

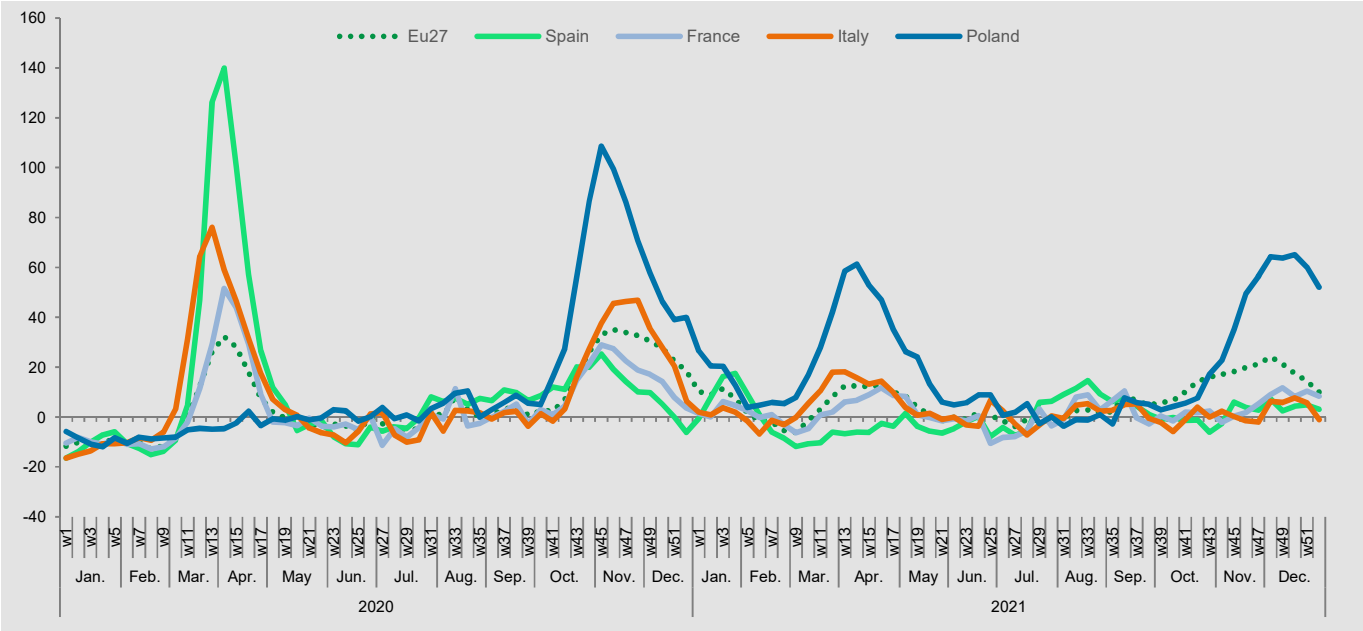
With the pandemic, Italy lost part of its pre-existing mortality advantage

Although in 2020 and 2021 Italy had lower standardised mortality rates than many European countries, the values observed in the last two years are a sharp increase compared to the average values of the five years preceding the pandemic (years 2015-2019). Italy, in fact, has generally enjoyed very low mortality rates and in the 2015-2019 period ranked among the lowest in Europe for standardised mortality levels, together with Spain and France. During the pandemic, however, part of this advantage was lost.

Italy suffered most from the first wave of the pandemic

In order to highlight the extent of the pandemic's effects on mortality in the most acute phases of the outbreak, the weekly changes in the standardised mortality rate in 2020 and 2021 compared to the reference period 2015-2019 were analysed; this is considered in this paragraph as a measure of excess mortality. The analysis conducted at weekly intervals, which allows for differences in the seasonal mortality patterns of the analysed countries[5], shows that the first wave of the *COVID-19* pandemic, in Europe, had its effects in terms of excess mortality starting in March 2020, when a surge in mortality was observed in some countries (Figure 2). Comparing the weekly standardised rate with the average 2015-2019 rate for the same period, the first country in terms of time where a rapid increase was observed was Italy, where the percentage change in the standardised rate compared to the 2015-2019 average rose to +31.3% in the week of the 9th of March and reached the peak of the first wave two weeks later (+76.1%). This was followed by Spain, which reached the highest peak among European countries at + 139.9% at the beginning of April (week 14). Among the countries experiencing the first wave in April were Belgium (+92.3% in the first half of April) and the Netherlands (+64.8% in the same period). This resulted in a European average peak of +32.3 in the week beginning 30 March 2020. Eastern European countries did not record higher mortality rates at this stage than the average in the pre-pandemic period, see for instance Poland in Figure 2.

Figure 2. Percentage change in age-standardised weekly death rates in selected European countries and the Eu27 average compared to the average 2015-2019 deaths (a). Years 2020 and 2021. Percentages



Source: Istat, processing on Eurostat data
(a) Provisional data. The European average does not include data for Ireland because they are not available, while for Germany data are only taken into account for ages 40 and over, as deaths for earlier ages are not available in the Eurostat DB. Data on deaths extracted on 9 March 2022.

5 Office for National Statistics - ONS. 2021. *Comparisons of all-cause mortality between European countries and regions: data up to the week ending 3 September 2021*. https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/comparisonsofallcausemortalitybetweeneuropeancountriesandregions/datauptoweekending3september2021

During the summer period, between May and July 2020, mortality rates gradually returned to normal across the EU27, but between August and September, a second pandemic wave began, with the change in the EU27 mortality rate reaching +35.0 % in the second week of November 2020 (week 46), the highest average European change in 2020. This second wave was milder for the countries most affected by the first one (in Italy, however, the peak rose to +46.8 in November - week 48) and showed a geographic prevalence among Eastern European countries; Poland, Bulgaria, Slovenia and the Czech Republic more than doubled (between week 45 and 48) the 2015-2019 average standardised rate for the same weeks.
In 2021 the excess mortality followed a similar trend but with less pronounced peaks than in 2020, which could be due to several factors, including the impact of the start of the *COVID-19* vaccination campaign.
The third pandemic peak was reached on average in April 2021 (+12.4% between weeks 13 and 16 of 2021), then decreased and the variation compared to the 2015-2019 average was almost zero in the summer period. In 2021, Italy reached its annual peak of excess mortality between March and April, with +17.9%, which is not negligible but much lower than observed in 2020. The highest peaks were again observed among the Eastern countries, with Poland showing a peak of more than +60% in April, which extended for about three months. After the summer of 2021, the weekly mortality trend, which had returend to its average values, reversed and the EU27 rate started to increase again in September, reaching the peak of the fourth wave, +24.1%, in early December 2021. In 2021, it was once again the Eastern European countries that showed the most marked mortality excesses, with Romania reaching the highest value of mortality rate change with +121.6% in the second half of October 2021 (week 42 of 2021), followed by Bulgaria and Slovakia (+90.5% in week 44 and +74.6% in week 49 of 2021, respectively). Poland once again recorded a peak of more than +60% in December, which lasted for almost two months.

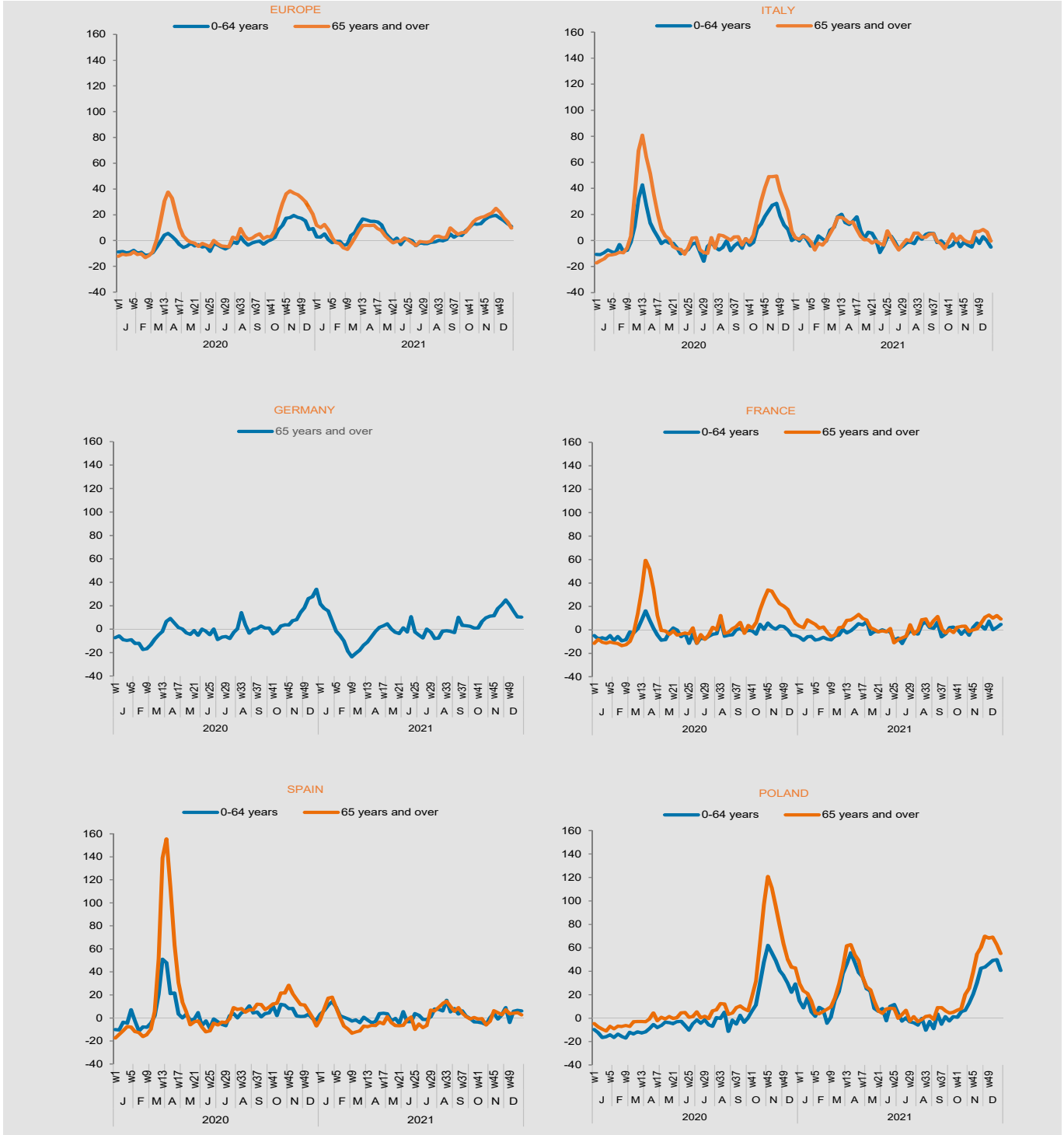
Also for people under 65 years of age, mortality excesses were very high in Italy in 2020 and in the rest of Europe in the 2 years

Since in Italy and in most European countries the overall excess mortality is mainly due to the increase in deaths among the elderly, it is interesting to analyse this indicator separately for people aged 0-64 and for those aged 65 and over.
In general, in all countries, the excess mortality calculated on the standardised rate was higher in the age group 65 and over than in the age group 0-64 (Figure 3)[6]. However, there was also an increase of the standardised rate compared to 2015-2019 among younger people. The highest value relative to the European average was +19.5 % in the second half of November 2020. In 2021, the European average peak for mortality among 0-64-year-olds was recorded in the first half of April with a change in the standardised rate of more than 16%. Even though, especially in the first two waves of the pandemic, the change in the standardised mortality rate compared to the pre-pandemic five-year period was significantly higher among the over-65s in Italy, this change is not negligible even among the under-64s. In fact, while maintaining particularly low mortality rates compared to the European average in the 0-64 age group, in the last week of March 2020 Italy recorded a

6 Exceptions include the two excess peaks observed in Hungary in 2021 (April and November), where the excess of the very young exceeds in value the excess of the over-65s.

positive change in the standardised rate, that was +42% higher than in 2015-2019 among 0-64 year-olds, while it was +80% higher among the elderly.

Figure 3. Percentage change in age-standardised weekly death rates in selected European countries and the Eu27 average compared to the average 2015-2019 deaths, broken down by age groups 0-64 and 65 and over (a). Years 2020 and 2021. Percentages



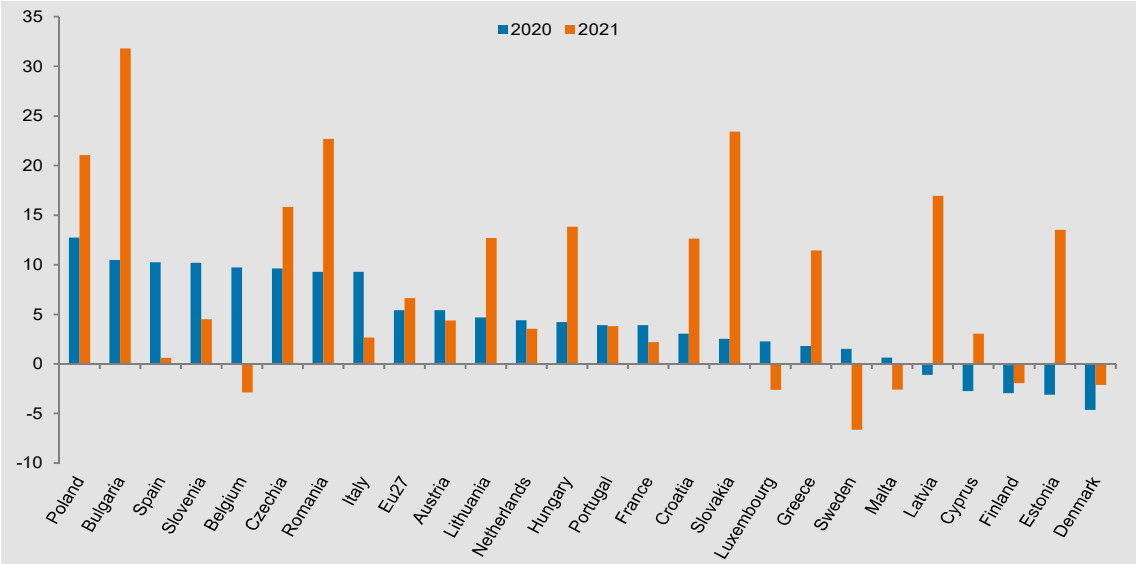
Source: Istat, processing on Eurostat data

(a) Provisional data. The European average does not include data for Ireland because they are not available, while for Germany data are only taken into account for ages 65 and over, as deaths for ages 0-39 are not available in the Eurostat DB, therefore the 0-64 age group would be incomplete. Data on deaths extracted on 9 March 2022.

In 2021 excess mortality decreased in Italy but had a steep increase in Eastern European countries

Summarising and looking at the average annual change in standardised rates gives an overall indication of the trend in excess mortality in 2020 and 2021.
In Italy, the percentage change in the standardised rate in 2020 was +9.3% compared to the previous five-year period, while in 2021 the excess compared to the standardised rate was lower, falling to a percentage change of +2.7% (Figure 4). In the EU27, there was an average increase of 5.4% in 2020, and the change increased to +6.6% in 2021, mainly due to Eastern European countries that experienced larger excess mortality peaks in the second year of the pandemic. In Poland, for example, the change in the standardised mortality rate rose from +12.7 % in 2020 to +21.1 % in 2021. In Spain and France, the situation is more similar to that experienced in Italy, with a greater excess of the standardised mortality rate in 2020 than in 2021: in Spain, the variation was respectively +10.3% in 2020 and +0.6% in 2021, while in France it was +3.9% in 2020 and +2.2% in 2021.

Figure 4. Percentage change in age-standardised death rates in selected European countries and the Eu27 average compared to the average 2015-2019 deaths (a). Years 2020 and 2021 (data in descending order for the value of the 2020 change). Percentages



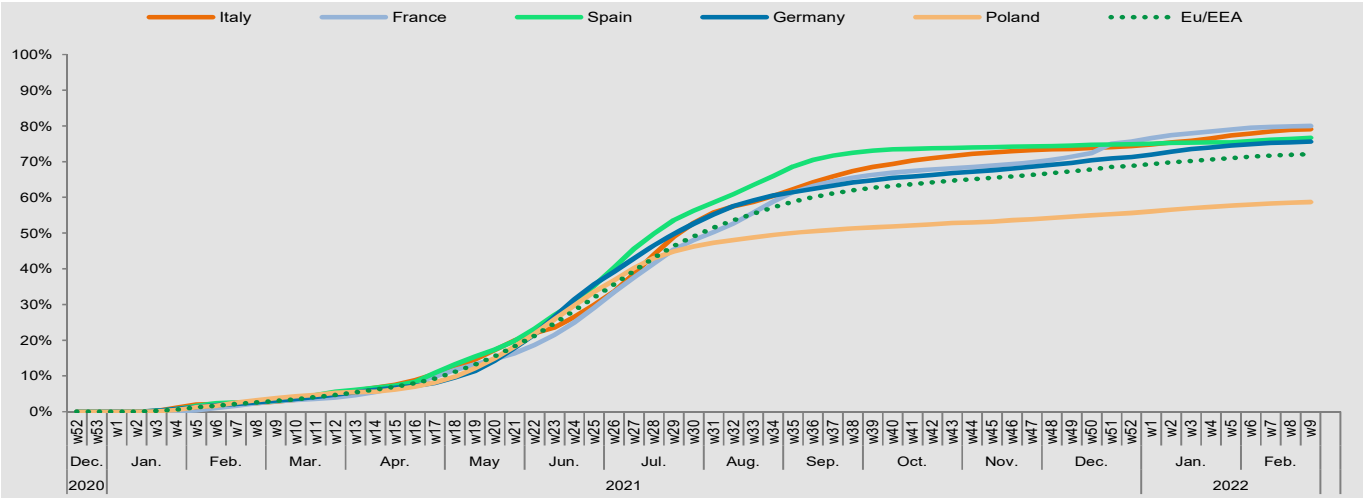
Source: Istat, processing on Eurostat data
(a) Provisional data. The European average does not include data for Ireland because they are not available, while for Germany data are only taken into account for ages 40 and over, as deaths for earlier ages are not available in the Eurostat DB. Data on deaths extracted on 9 March 2022.

In Italy, vaccination coverage was high and in line with the main European countries; Eastern European countries lagged behind

As seen, in 2021 the excess mortality rate was overall lower than in 2020, and this reduction was also due to the introduction of *COVID-19* vaccines. The vaccination campaign started in Europe at the end of December 2020, but the differences between countries were substantial: whereas in France and Italy almost 80% of the total population had completed the primary vaccination cycle by the end of 2021, this percentage did not reach 60% in Poland (Figure 5).
The percentage of those vaccinated varied widely between countries (Figure 6). For the total

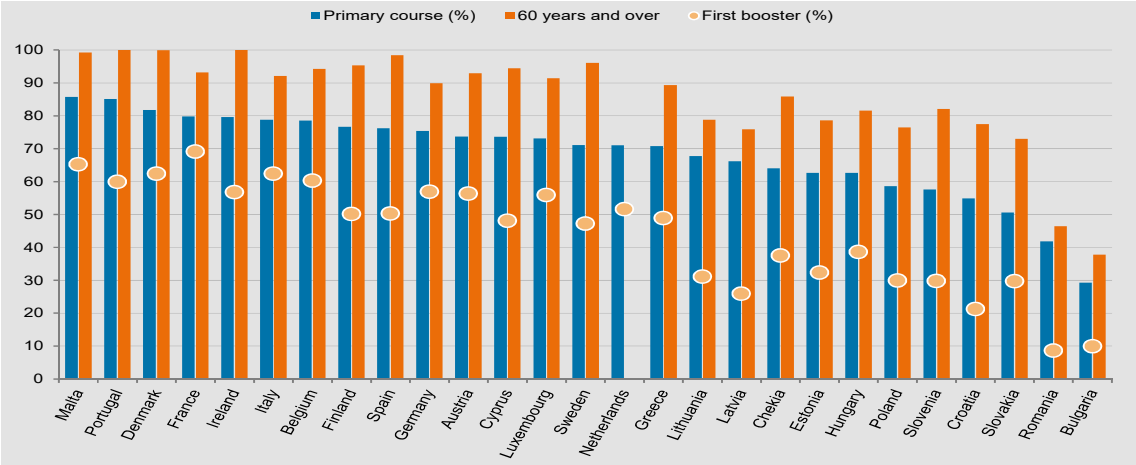
population, the percentage of those vaccinated varies from over 80% in Denmark, Portugal and Malta, to less than half of the population in Romania (41.8%) and Bulgaria (29.3%). Italy, with 78.8% of the total population vaccinated,[7] is at the top of the list. The percentage rises if we consider the population aged 60 years and over, and reached 92.1% in Italy, overtaken, however, by 11 countries, including Portugal and Ireland, which reached the total population in this age group. Again, Romania (46.4%) and Bulgaria (37.8%) lagged far behind. By 2 March 2022, the percentage of the total population in Italy that had also received the booster dose reached 62.4%, overtaken only by France and Malta (69.1 and 65.2% respectively).

Figure 5. Persons that completed the primary course of COVID-19 vaccine in selected Eu27 countries by week. From week 52 in 2020 to week 9 in 2022 (a). Percentages



Source: European Centre for Disease Prevention and Control
(a) Data extracted on 2 March 2022.

Figure 6. Persons that completed the primary course of COVID-19 vaccine and booster dose in Eu27 countries (a). Total population and persons aged 60 and over.



Source: European Centre for Disease Prevention and Control
(a) The primary cycle is defined as the administration of the first and second dose, or a single dose in the case of Johnson vaccine. Data extracted on 2 March 2022.

7 The European comparison figure refers to the total population and is therefore slightly different from the figure reported in the Health Chapter, which refers to the population aged 5 years and over.

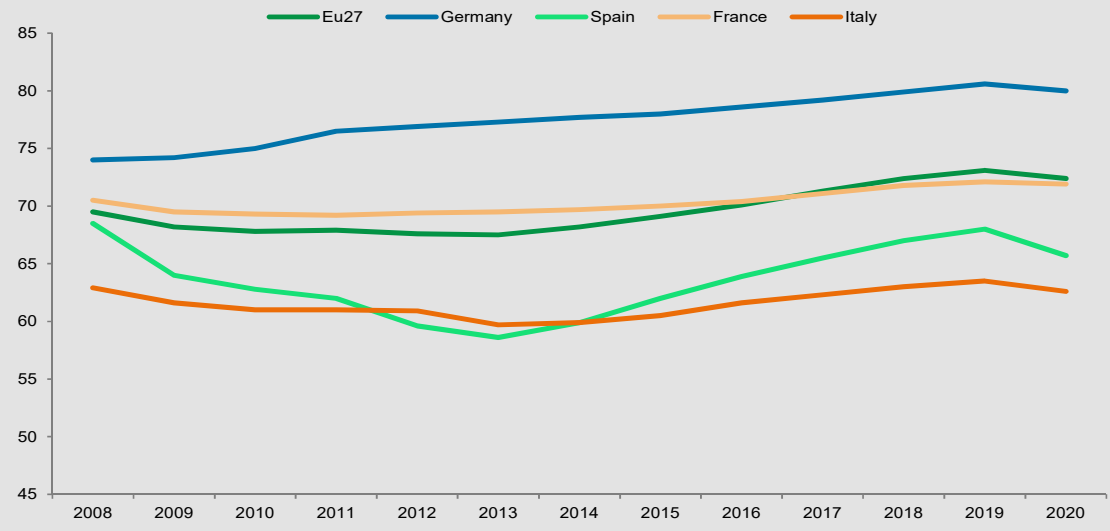
2. Pandemic and labour market participation

In the pre-pandemic period, Italy loses more employment than Europe and recovers more slowly

In the European context, Italy's employment dynamics in the period from the economic crisis to the threshold of the pandemic was particularly weak, showing employment rates below the European average. In order to understand Italy's position in the European context, it would be useful, first of all, to analyse labour market trends in the years of the economic crisis and the subsequent recovery and, secondly, to focus on the period characterised by the pandemic shock. For the sake of comparability with other European countries over the 2008-2020 period, we have examined Eurostat data based on the regulation in force until 2020[8].

The year 2013 marked the worst year of the economic and labour market crisis for Italy: the employment rate (between the ages of 20 and 64) dropped to a minimum of 59.7% (it was 62.9% in 2008) (Figure 7) and moved away from the EU27 average by -8 percentage points (in 2008 the gap was -7 percentage points). Among the large European countries, only Spain had a worse performance than Italy. After a sharp fall in the employment rate in 2012, Spain's employment rate hit a low in 2013 (58.6%), but in 2015 it returned to values higher than Italy's without fully recovering the level corresponding to the pre-crisis period (68.5% in 2008). By contrast, during the most difficult period of the economic crisis 2013-2014, other countries, such as France, maintained employment levels or, like Germany, even showed growth performance. The result is a differentiation of countries' paths in terms of employment rate trends, even before the onset of the pandemic.

Figure 7. Employment rate of people aged 20 to 64 in Eu27 selected countries. Annual data 2008-2020 (a). Percentages

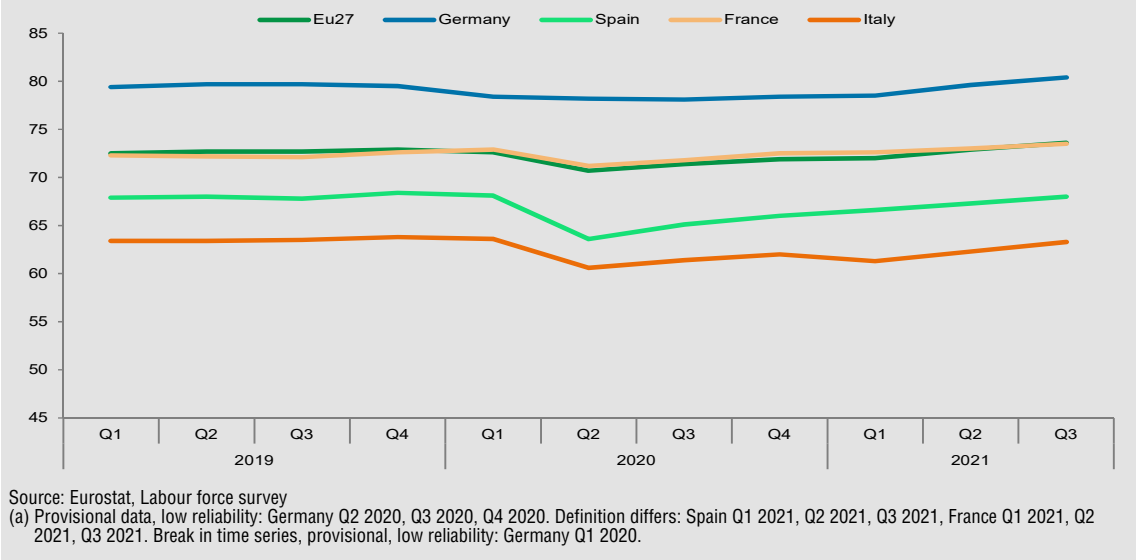


Source: Eurostat, Labour force survey.
(a) The rates are based on the Regulation in force until 2020

8 The reconstruction of the estimates following the entry into force of Regulation 2019/1700, which was available since 2004 for Italy but only since 2009 for the other countries, does not allow analysing the annual rates since 2008. For this reason, we chose to use Eurostat time series based on the Regulation in force until 2020. The estimates of annual employment rates for Italy may therefore differ from those in the Labour chapter of this volume.

The exit from the economic recession with the return to pre-crisis levels of the employment rate followed different rhythms among the various countries: for Italy it took place in 2018, two years later than the EU27 and one year later than France. In 2019, Spain had not yet reached the 2008 level. However, Italy's gap with the EU27 average continued to grow even during the recovery phase, and in 2019 the Italian employment rate was 10 points lower, the widest gap among the countries here selected. Therefore, at the threshold of the pandemic crisis, the labour market in Italy appeared weaker, with a very limited recovery compared to 2008 and a wider gap with all the largest European countries.
In order to better appreciate the changes that have also occurred in correspondence with the evolution of the pandemic phases, it is useful to examine the quarterly trends in the employment rate and compare them with 2019, the pre-pandemic year (Figure 8). In the four quarters of 2019, the 20-64 employment rate in Italy grew, as in the EU27 average, by 0.4 percentage points, but at much lower levels (reaching 63.8% in the fourth quarter in Italy against 72.9% in the EU27). Only Greece was behind Italy (61.5%). By contrast, a slight reduction was seen in Germany and Spain in 2019.

Figure 8. Quarterly employment rate of people aged 20 to 64 in selected Eu27 countries. Seasonally adjusted data Q1 2019 - Q3 2021 (a). Percentages



Source: Eurostat, Labour force survey
(a) Provisional data, low reliability: Germany Q2 2020, Q3 2020, Q4 2020. Definition differs: Spain Q1 2021, Q2 2021, Q3 2021, France Q1 2021, Q2 2021, Q3 2021. Break in time series, provisional, low reliability: Germany Q1 2020.

The arrival of the pandemic further distances Italy from Europe

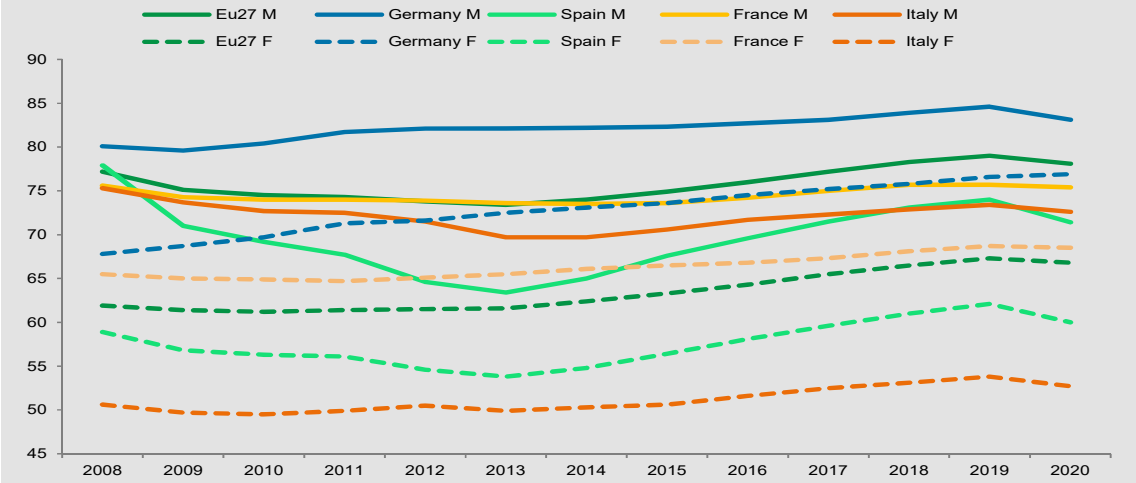
The pandemic has led to a deterioration of the Italian employment levels and a further increase in the gap with the EU27 average. At the beginning of 2020, the first signs of a turnaround in the growth of the employment rate emerged, which, in the first quarter on average in the EU27, lost -0.3 percentage points compared to the fourth quarter 2019, with the decline being more intense in Germany (-1.1 percentage points) and less intense in Italy (-0.2 percentage points). On the other hand, in the second quarter 2020 the contraction became more evident with losses, on average, of -1.9 percentage points compared to the previous quarter, which in Italy reached -3 percentage points and in Spain were even more evident (-4.5 percentage points). The recovery began in the third quarter of 2020, albeit at different speeds: the return to the pre-pandemic employment levels of the last quarter of 2019 took place in the second quarter of 2021 in the EU27 while, in Italy, it was not reached

until the third quarter of 2021 (the latest available data for European comparison). Moreover, in the third quarter 2021, it emerged that Italy, with the slow recovery of employment levels compared to the pre-pandemic period, has worsened its relative position in the ranking of countries by employment rate 20-64 years old, falling from penultimate to last place, together with Greece. In fact, the gap between Italy and the average of the EU27 countries, already the highest in the fourth quarter of 2019 when it stood at -9 percentage points, grew further to -11 percentage points in the first half of 2021, remaining the highest of all countries and with a wider gap than before the pandemic.

Unlike in other countries, women in Italy were more hit by the pandemic

Gender differences were marked not only in employment levels before and after the economic recession and the pandemic crisis, but also in the speed of recovery and exit from the two crises (Figure 9).

Figure 9. Employment rate of people aged 20 to 64 in Eu27 selected countries by gender. Annual data 2008-2020 (a). Percentages

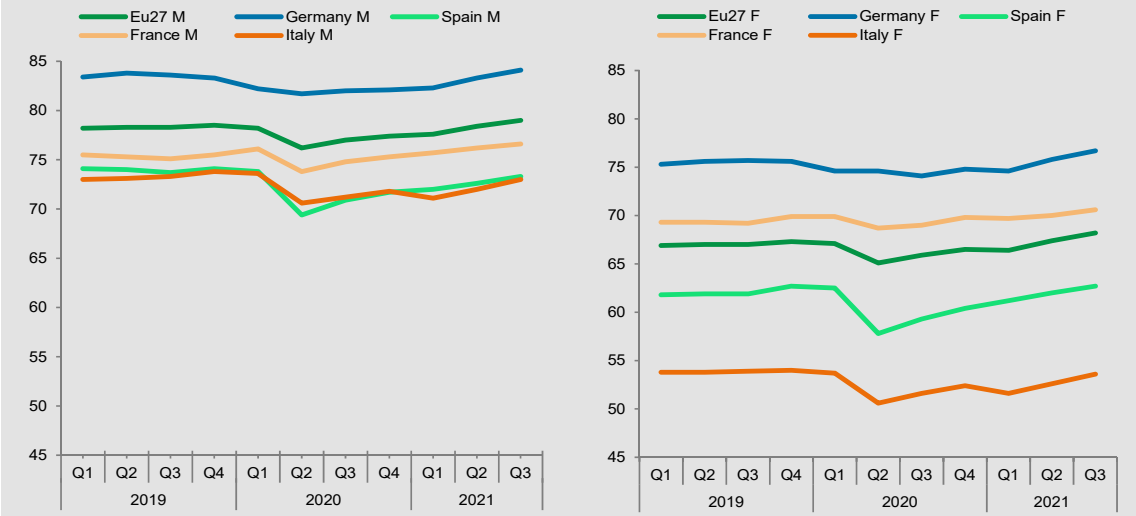


Source: Eurostat, Labour force survey adjusted series, historical data
(a) The rates are based on the Regulation in force until 2020

The recovery of the 2008 level of the 20-64 employment rate, at different rates across countries, occurred earlier for women (in 2014 on average in the EU27) and later for men (in 2017), who had been hit harder by the economic recession affecting the manifacturing and construction sectors. In France, one of the countries where the female employment rate is higher than the European average, the recovery was already recorded in 2013 for women, and only five years later for men. In Spain, the employment rate followed a very erratic trend, especially for men, who suffered greater losses and reached a minimum among the largest EU27 countries in 2013. The gap between men in Spain and the EU27 average, which in 2008 showed a slight advantage for the former, reached -10 percentage points in 2013 and slowly decreased in the following years but remained negative (-5 percentage points in 2019). The return to 2008 levels in Spain took place in 2017, but only for women, with a gap with the EU27 that, starting from a -3 percentage point disadvantage in 2008, widened to -8 points in 2013 and narrowed to -5 percentage points, as for men, in 2019.
The return to 2008 levels, which also in Italy affected only the female employment rate, took

place in 2015, at a slower pace than in the other European countries. The gap with the EU27 - which was already the widest among the countries in 2008 - grew further for both gender components up to the threshold of the pandemic: for women, it went from -11 percentage points in 2008 to -14 in 2019; for men, the gap with the EU27 average grew from -2 in 2008 to -6 in 2019. Germany, on the other hand, maintained a better *performance* than the other EU27 countries throughout the period 2008-2019, and consistently increasing employment rates with values above the EU27 average for both men and women, which translated into a positive and maximum gap from the EU27 in 2013, only to decrease somewhat at the threshold of the pandemic. So, just before the arrival of the pandemic, the weakness of the employment recovery compared to 2008 in Italy was also accompanied by important gender disparities, with the lowest female employment rate among the major European countries and a male rate close only to that of Spain (despite the latter having recorded the most marked decrease in 2013).

Figure 10. Quarterly employment rate of people aged 20 to 64 in selected Eu27 countries by gender. Seasonally adjusted data Q1 2019 - Q3 2021 (a). Percentages



Source: Eurostat, Labour force survey
(a) Provisional data, low reliability: Germany Q2 2020, Q3 2020, Q4 2020. Definition differs: Spain Q1 2021, Q2 2021, Q3 2021, France Q1 2021, Q2 2021, Q3 2021. Break in time series, provisional, low reliability: Germany Q1 2020.

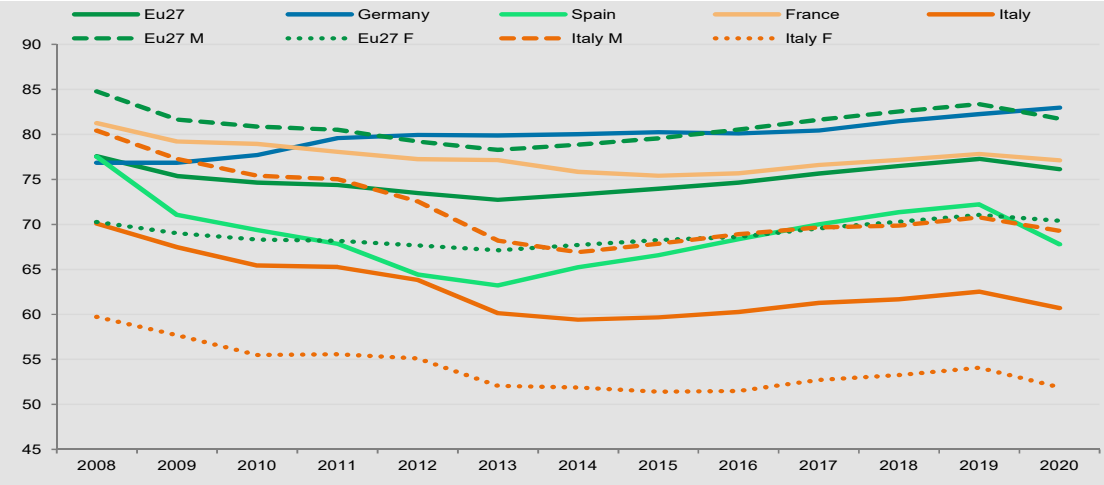
In the second quarter of 2020, when the decline in the employment rate due to the pandemic was most acute, gender differences of varying magnitude across countries become apparent (Figure 10). Although in the European average no gender differences emerge in terms of the reduction in the employment rate (-2 percentage points for both genders compared to the first quarter of 2020), in Italy and Spain the losses were larger for women (-3.1 and -4.7 percentage points, respectively, compared to -3.0 and -4.4 for men). In contrast, in France and Germany the disadvantage for men was greater (-2.3 and -0.5 respectively against - 1.2 and 0 for women). The recovery from the pandemic shock began in the third quarter of 2020, at different speeds, but the return to end-2019 employment levels took place, on average in the EU27, in the second (for women) and third (for men) quarter of 2021. In Italy, however, despite the growth in employment levels observed up to the last data available for the European comparison (the third quarter of 2021), neither men nor women reached the indicator values corresponding to the fourth quarter of 2019. Therefore, Italy's gap with the EU27 average, which was already the widest before the pandemic

and to a greater disadvantage for women, increased further during the pandemic-induced shock. In the third quarter of 2021, the gap measured 15 points among women and 6 points among men. The pandemic has thus increased the pre-existing gap in employment levels between Italy and the rest of Europe.

Before the pandemic young people were already penalised in Italy and Spain

A particularly vulnerable segment of the population is that of young people who, in Italy, approached the threshold of the pandemic without having yet recovered from the severe losses in terms of employment rate linked to the economic recession and having increased their gap with the European average (Figure 11). Compared to 2008, in fact, in 2019 in Italy the employment rate of 25-34-year-olds was still down by -7.5 percentage points despite the fact that the indicator started to grow again in 2014 at a pace, however, much slower than that recorded during the downturn and lower than that of the largest European countries. In fact, at the European level, the return to the pre-crisis values, in 2019 was almost complete (-0.3 compared to 2008). Even in Spain, where the employment rate of 25-34 year-olds had rapidly fallen down, the recovery was faster than in Italy, although it was not such as to guarantee a full recovery to the 2008 values. In France, the employment rate of young people fell until 2015, with a sharp reduction in the gap - still positive, however - from the European average value. This is not the case in Germany, where young people enjoy an employment rate higher than the European average, which is growing, with a very large advantage in the worst years of the economic crisis (2013-2015, +7 percentage points with over 80% of young people in employment). In Italy in 2019 the employment rate for young people aged 25-34 continued to remain the lowest of all European countries (62.5% compared to 77.3% for the EU27 average), as already observed in 2008 (70.1% compared to 77.6% in the EU27), and therefore the gap with Europe, which had grown over the years, was the widest at -15 percentage points. This gap then became particularly wide for young women aged 25-34 in Italy (-17 percentage points compared to -13 percentage points for men in 2019).

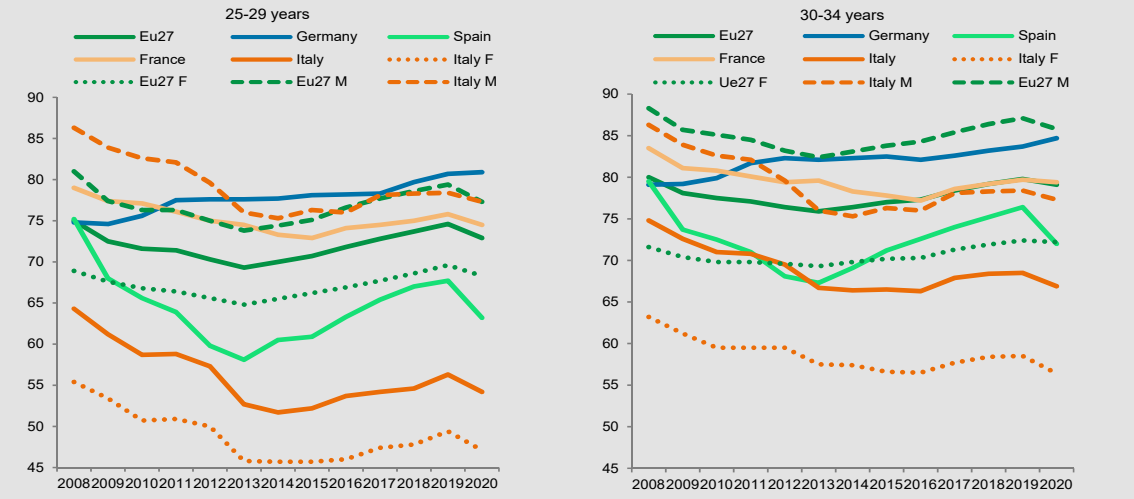
Figure 11. Employment rate of people aged 25 to 34 in Eu27 selected countries by gender. Annual data 2008-2020 (a). Percentages



Source: Eurostat, Labour force survey
(a) Break in time series: Germany 2010, 2011, 2012, France 2014. Break in time series, provisional: Germany 2020. The rates are based on the Regulation in force until 2020.

However, the group of young people is rather heterogeneous and in Italy, as in Spain, the differences between the group of 25-29-year-olds and the group of 30-34-year-olds are considerable and indicate a weaker situation in terms of labour market participation of younger people (Figure 12). Indeed, 25-29-year-olds have a much lower employment rate than 30-34-year-olds, experienced greater losses and a more modest recovery that kept them further away from the pre-crisis value than the young adult age group (-8 percentage points among 25-29-year-olds and -6.3 percentage points among 30-34-year-olds). In Italy in 2019 the employment rate of young people was the lowest of all European countries (56.3% among 25-29-year-olds and 68.5% among 30-34-year-olds), thus the gap with Europe was the widest at -18 percentage points for 25-29-year-olds and -11 for 30-34 year-olds. The gap with Europe, which has grown over the years, was particularly wide among women, especially in the youngest age group 25-29 (increasing from -14 in 2008 to -20 in 2019, compared to -8 and -17 among male peers and -8 and -14 among women aged between 30 and 34 years).

Figure 12. Employment rate of people aged 25-29 and 30-34 in Eu27 selected countries by gender. Annual data 2008-2020 (a)**. Percentages**

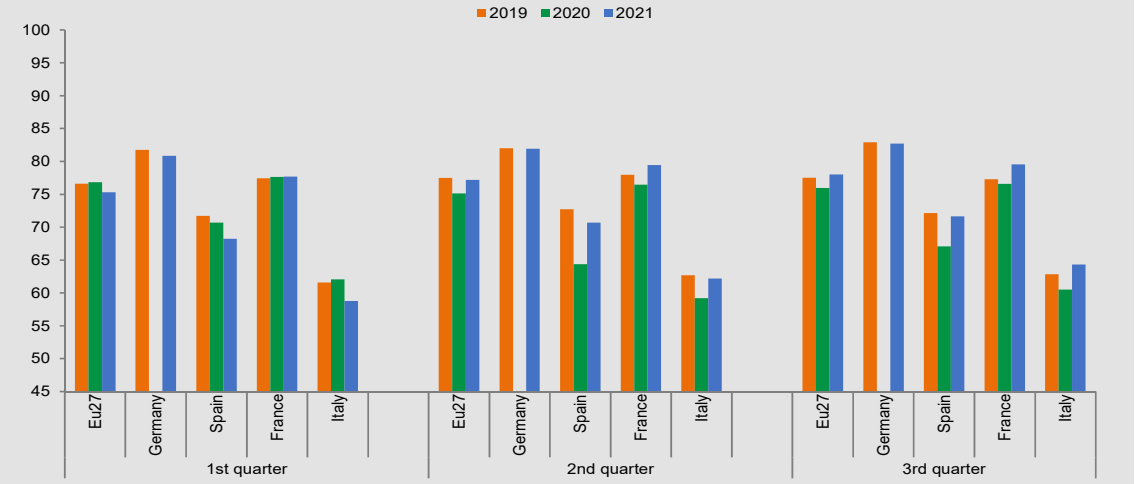


Source: Eurostat, Labour force survey
(a) Break in time series: Germany 2010, 2011, 2012, France 2014. Break in time series, provisional: Germany 2020. The rates are based on the Regulation in force until 2020.

In Italy and Spain the youth employment was most affected also by the pandemic. Young women were most affected only in Italy

With the arrival of the pandemic, the situation of young people in the labour market has further deteriorated with marked losses in the employment rate as of the second quarter of 2020 (Figure 13). Italy was among the worst affected countries (-3.5 percentage points in the second quarter of 2020 compared to the second quarter of 2019, against -2.3 percentage points compared to the average of European countries), overtaken only by Spain (-8.3 percentage points).

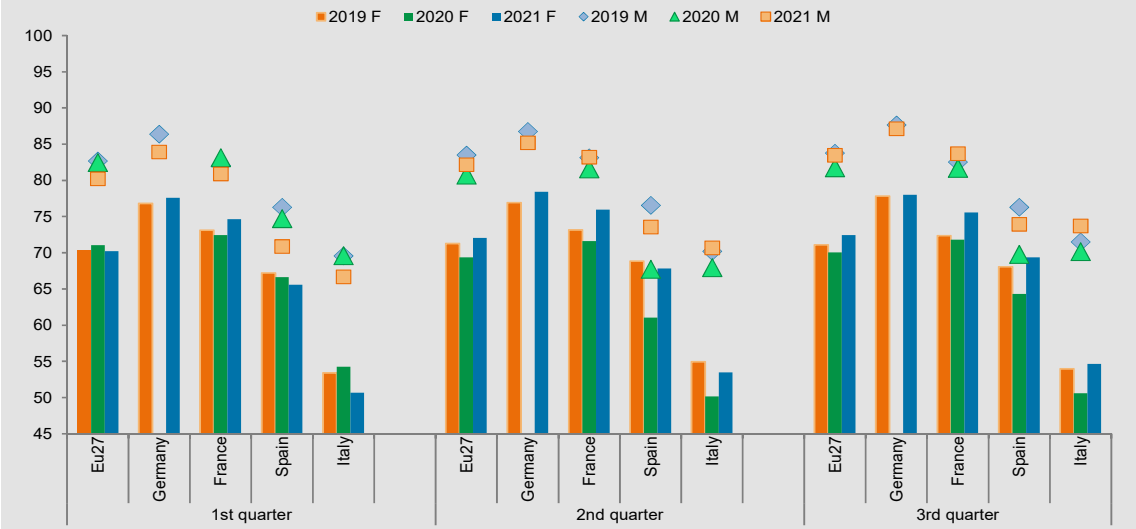
Figure 13. Quarterly employment rate of people aged 25 to 34 in selected Eu27 countries. Seasonally unadjusted data Q1 2019 - Q3 2021 (a)**. Percentages**



Source: Eurostat, Labour force survey
(a) Break in time series, definition differs: France Q1 2021; Spain Q1 2021. Break in time series: Italy Q1 2021; Germany Q1 2021; Eu27 Q1 2021. Definition differs: France Q2 2021, Q3 2021; Spain Q2 2021, Q3 2021. The 2019 and 2020 rates are based on the Regulation in force until 2020.

However, the pandemic crisis did not affect young men and young women equally in Italy: for the latter, the employment rate suffered the greatest losses (-4.8 percentage points versus -2.2 percentage points for male peers between the second quarter of 2019 and the second quarter of 2020 - Figure 14). Moreover, the disadvantage of young women in Italy was the opposite of what was recorded in the rest of the EU27, where it was young men who suffered more (-2.7 points compared to -1.9 of young women), even in Spain (-8.8 points compared to -7.8 of young women). A second phase of employment decline among young people was seen in the first quarter of 2021 when, on average in the EU27, the employment rate lost -1.5 points compared to the first quarter of the previous year (2020), but in Spain, the loss was -2.4 points and in Italy, it reached -3.3 points. Even in this phase, contrary to the rest of the EU27, the decrease in the employment rate in Italy alone was greater for young women than for young men (-3.6 points and -2.9 points with respect to the first quarter of 2020), although the difference between the two components was less evident than in the first phase of the pandemic. Overall, taking stock two years after the start of the pandemic, in the second quarter of 2021 the employment rate of young women aged 25-34 was -1.4 points below the corresponding rate in the second quarter of 2019, while that of young men rose by 0.5 points, the opposite of the EU average (+0.8 for women and -1.3 for men). In Spain, where the dynamics were very similar to those in Italy but with significantly more marked losses, neither the young nor the 25-34-year-olds recovered to the levels of the second quarter of 2019. In France, the fall in the 25-34 employment rate was modest and of equal magnitude between men and women. Furthermore, the recovery in the subsequent period was to the greater advantage of women, with a more significant net gain between the second quarter of 2021 and the corresponding quarter two years earlier (+2.8 for women 25-34 compared to +0.1 for men). Overall, therefore, the pandemic has made the employment situation of young women in Italy more critical.

Figure 14. Quarterly employment rate of people aged 25 to 34 in selected Eu27 countries by gender. Seasonally unadjusted data Q1 2019 - Q3 2021 (a). Percentages

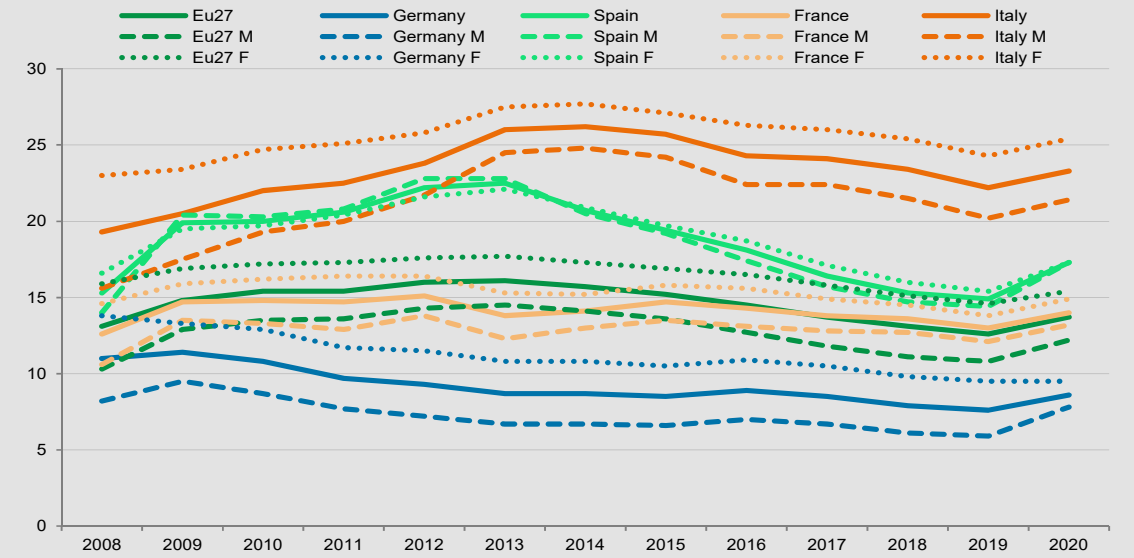


Source: Eurostat, Labour force survey
(a) Break in time series, definition differs: France Q1 2021; Spain Q1 2021. Break in time series: Italy Q1 2021; Germany Q1 2021; Eu27 Q1 2021. Definition differs: France Q2 2021, Q3 2021; Spain Q2 2021, Q3 2021. The 2019 and 2020 rates are based on the Regulation in force until 2020.

Italy ranks first for the presence of NEET in Europe

Italy ranks first in terms of the number of the particular segment of young people between 15 and 29 years of age who are no longer in education or training or even engaged in a job, known as NEET, *Not in Employment, Education or Training*.
In 2008 the phenomenon affected 19.3% of this age group in Italy and 13.1% in Europe. The growth in Italy was faster than in the EU27 average until in 2014 - at the height of the employment crisis - it affected more than one young person in four (26.2%, 10 percentage points above the EU27 average - Figure 15). Subsequently, the share slowly decreased until 2019, although without returning, in the case of Italy, to pre-crisis values, but signalling a catch-up deficit (+2.9 percentage points above the corresponding 2008 value). On the other hand, Spain, which had recorded a sharp increase in the number of young NEETS, especially among males, until 2014, also experienced a sudden decline thereafter that brought the indicator back below its 2008 baseline value.
The incidence of the NEET condition is greater among young women than among young men and the gap between the two gender components in Italy narrows only in correspondence with the hardest years of the economic crisis, which affected young males more, and returns to being wider than the 2019 EU27 average.

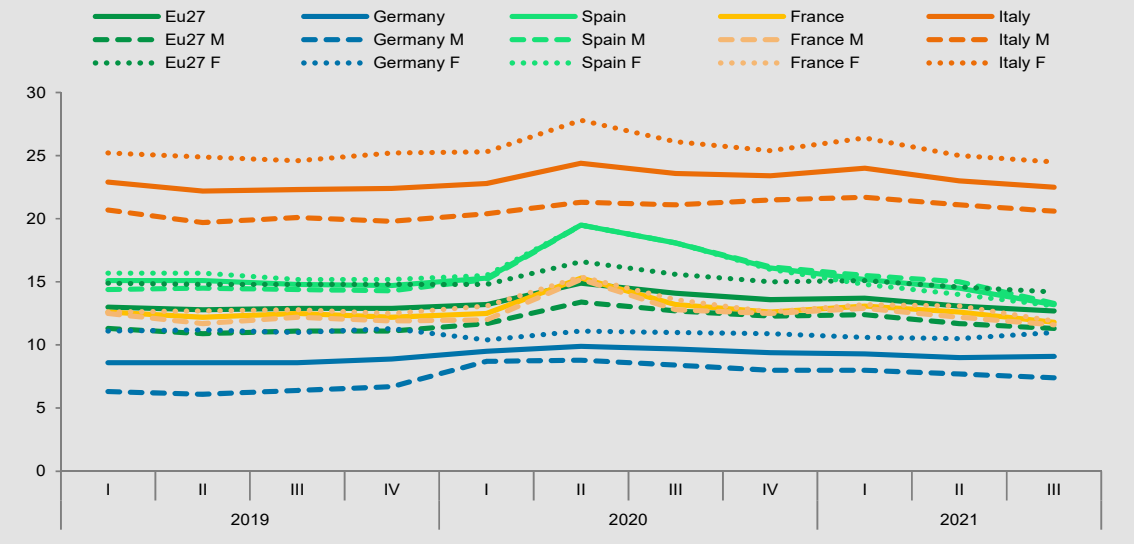
Figure 15. Rate of young people aged 15 to 29 neither in employment nor in education and training (NEET) in selected Eu27 countries by gender. Annual data 2008-2009 (a). Percentages



Source: Eurostat, Labour force survey
(a) Break in time series, provisional: Germany 2020. Break in time series: Germany 2008, 2010, 2011; Spain 2014; France 2013, 2014. Data are based on the Regulation in force until 2020.

Even in this group of young people, the focus on the pandemic period allows us to highlight the resurgence of the NEET phenomenon (Figure 16). In fact, in the second quarter of 2020, at the height of phase 1 of the pandemic, the increase in the EU27 of young people out of education and not in employment is evident (+1.7 points in the second quarter of 2020 compared to the previous quarter), an increase driven by countries such as Spain (+4.2)

Figure 16. Quarterly rate of young people aged 15 to 29 neither in employment nor in education and training (NEET) in selected Eu27 countries by gender. Seasonaly adjusted data Q1 2019 - Q3 2021 (a). Percentages



Source: Eurostat, Labour force survey
(a) Definition differs: Spain Q1 2021, Q2 2021, Q3 2021; France Q1 2021, Q2 2021, Q3 2021. Break in time series, provisional, low reliability: Germany Q1 2021. Provisional, low reliability: Germany: Q2 2021, Q3 2021, Q4 2021.

but also France (+2.8) and which, however, in Italy is more modest and slightly below the European average (+1.6). However, Italy has structurally much higher values of this phenomenon, and in the downward phase of the indicator, it still keeps a position well above that of the other European countries. Moreover, in Italy - unlike in the hardest years of the economic crisis, when, due to the greater increase among young men the two gender components had come closer together - during the first phase of the pandemic it is mainly the young 15-29-year-olds women who are worse off with a sharp increase in the incidence of NEET, which distances them from the corresponding young men. Moreover, in the first quarter of 2021, a second phase of increase in the incidence of NEET is observed, more in Italy than in the rest of the EU27 (respectively +0.6 points and +0.1 points compared to the previous quarter) and stronger among women than among men (+1.0 points compared to +0.2 points). The latest European data available for comparison, referring to the third quarter of 2021, shows that, overall, compared to the beginning of 2019, in EU27 the incidence of NEET has started to fall again, but at different speeds: faster for the young women and young men in Spain (respectively -2.6 and -1.1 percentage points in the third quarter of 2021 compared to the first quarter of 2019), slower in Italy (respectively -0.7 and -0.1 points).

Health[1]

The health topic, with the spread of the SARS-CoV-2 pandemic, has dominated the international scene in the last two years, mobilising huge human and financial resources to avert the serious risks of the loss of important shares of the population, especially the fragile one, the collapse of health systems and the worsening of a socio-economic crisis of enormous magnitude.

Italy, accustomed in recent decades to a progressive consolidation of high levels of longevity, has been among the hardest hit, also in view of the greater demographic weight of the elderly compared to other European countries.

In 2020, the first year of the pandemic, mortality was particularly high among the population aged 80 years and over, who are often in a frail condition, and was particularly evident in northern regions. In 2021, mortality among the elderly was much lower than in 2020, due to the high vaccination coverage achieved in this population group, while it increased slightly among men aged 0-49 and women aged 50-64. Furthermore, in 2021, the map of contagion changed, with the impact affecting the whole country, albeit higher in the South and Islands.

Excess mortality led to a reduction in life expectancy at birth of more than 1 year nationwide in 2020, but estimated data show a hint of recovery for 2021 with a value of 82.4 years.

Despite the decline in expected life years in 2020, the healthy life expectancy at birth indicator improved unexpectedly, with a gain of 2.4 years compared to 2019, due to an increase in the share of people who, in the context of the pandemic, probably assessed their health status more favourably. In 2021, this improvement was partially absorbed, but still life expectancy in good health remained higher than pre-pandemic levels.

The two pandemic years put a strain on the psychological well-being of the population. In particular, a deterioration in mental well-being was observed in 2021, especially among 14-19-year-olds.

The proportion of the elderly aged 75 years and over suffering from severe limitations or multi-chronicity conditions continued to decline, although levels remained high, affecting almost half of the population in this age group in 2020-2021.

With regard to lifestyles, in both 2020 and 2021, the indicator monitoring sedentariness showed a further improvement in line with the trend recorded in recent years. However, the decrease did not affect the very young 14-19-year-olds for whom there was a significant increase in the proportion of sedentary people. Excess body weight among the adult population aged 18 years and over decreased in 2021 compared to 2020, but the decrease only affected the proportion of people in an overweight condition, while the proportion of people in an obese condition increased slightly but steadily in both 2020 and 2021.

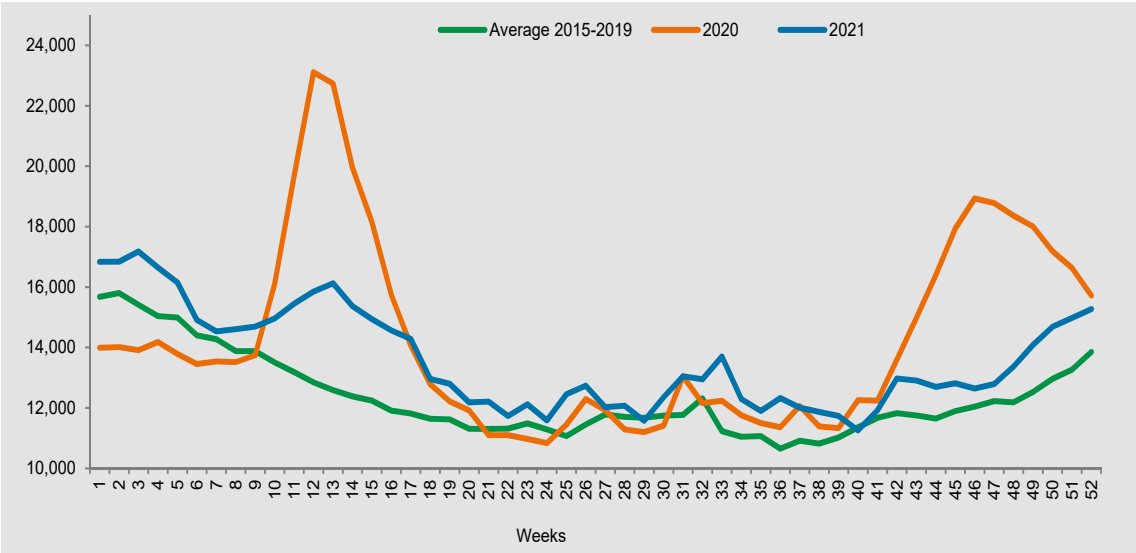
Between 2020 and 2021, the proportion of smokers remained stable, while, with regard to the proportion of people with risky alcohol consumption, an increase was observed in 2020 and, subsequently, in 2021.This is a decrease that concerned both habitual excess consumption (back to 2019 levels) and binge drinking.

1 This chapter was edited by Emanuela Bologna, with contributions from: Marco Battaglini, Silvia Bruzzone, Gianni Corsetti, Lidia Gargiulo, Laura Iannucci, Simone Navarra, Marilena Pappagallo, Silvia Simeoni, Alessandra Tinto.

In the second year of the pandemic, excess mortality drops but spreads throughout the territory

On 21 February 2020, the ISS confirmed the first case of COVID-19 positivity diagnosed at the Sacco Hospital in Milano; since then, until 31 December 2021, there have been more than 6.4 million positive cases reported, and deaths from COVID-19 in the same period were about 137,000 (78,000 in 2020, 59,000 in 2021).
In the transition between 2020 and 2021, mortality in the age group of the over-70s and in the 65-74 age group was greatly reduced, thanks to the high vaccination coverage achieved among these individuals, while mortality has increased slightly among men in the 0-49 age group and among women in the 50-64 age group. The year 2021 may be remembered as the year that saw the largest vaccination campaign in Italian history; by the end of the year, more than 109 million doses of vaccine for the prevention of the SARS-CoV-2 infection had been administered, with a total of almost 47 million people having received at least one dose of vaccine (first dose), accounting for 81.0% of the population aged 5 years or older.
One approach to measuring the impact of the COVID-19 epidemic on mortality is to count excess deaths for all causes, i.e. how many more deaths (from all causes) there were in the country than in previous years. Excess mortality can provide an indication of the overall impact of the epidemic, not only by taking into account deaths directly attributed to COVID-19 through integrated COVID-19 surveillance, but also those that may have occurred without a microbiological diagnosis or indirectly related, such as deaths caused by delayed or missed treatment due to an overburdened healthcare system. The excess mortality has been estimated by comparing, for the same period, the data for 2020 and 2021 with the average number of deaths for the five-year period 2015-2019. Thereby, implicitly assuming that the spread of the epidemic will produce an increase in deaths even if this is not directly attributable to the number of positive cases that died.
In 2021, the total number of deaths from all causes was down comparing to the previous

Figure 1. Weekly trend of deaths from all causes. Years 2020, 2021 and average 2015-2019. Absolute values



Source: Istat, Integrated Municipal Daily Mortality Database

year (Figure 1 and Table 1) but still remained at a very high level: 709,035 deaths, 37 thousand fewer than in 2020 (-5.0%), but 63 thousand more than the 2015-2019 average (+9.8%).
Compared to 2020, the excess mortality was no longer concentrated mainly in the North but spread throughout the territory, being highest in the South and Islands. On the other hand, the decrease compared to 2020 was due to the decrease in deaths observed in the North, which had been the area most affected by the pandemic, especially in the first wave of March-April 2020. The central and southern areas, on the contrary, recorded a greater increase in excess mortality in 2021 than in 2020, as they were affected by the pandemic mainly from October 2020, with the start of the second wave.

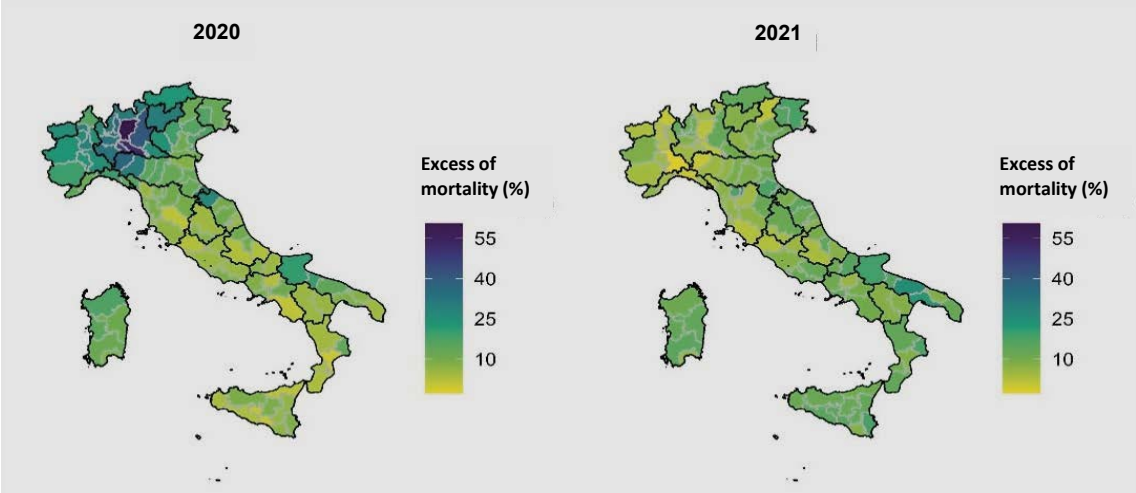
Table 1. Deaths by geographic area. Year 2021. Absolute values and percentage difference compared to 2020 and the 2015-2019 average

Geographic areas	Average 2015-2019	2020	2021	Percentage difference 2021vs2015-2019	Percentage difference 2021vs2020
North	301,885	376,181	326,534	8.2	-13.2
Centre	131,647	141,550	143,024	8.6	1.0
South and Islands	212,087	228,415	239,477	12.9	4.8
Italy	**645,620**	**746,146**	**709,035**	**9.8**	**-5.0**

Source: Istat. Integrated municipal daily mortality database

Thus, it can be said that the geography of mortality changed considerably between 2020 and 2021, as a result of the change in the spread of the virus and the progression of the vaccination campaign. These dynamics had differential effects on overall mortality, which decreased, but only due to the reduction in the northern regions. By contrast, all regions in Southern Italy, except Sardegna, saw a slight increase in mortality in 2021. Aereas such as those of Bergamo or Cremona saw their excess mortality in 2020 fall by more than 50% to just over 2%. In contrast, most central and southern provinces saw an increase in excess mortality in 2021 (Figure 2).

Figure 2. Provincial distribution of excess mortality in Italy. Years 2020 and 2021

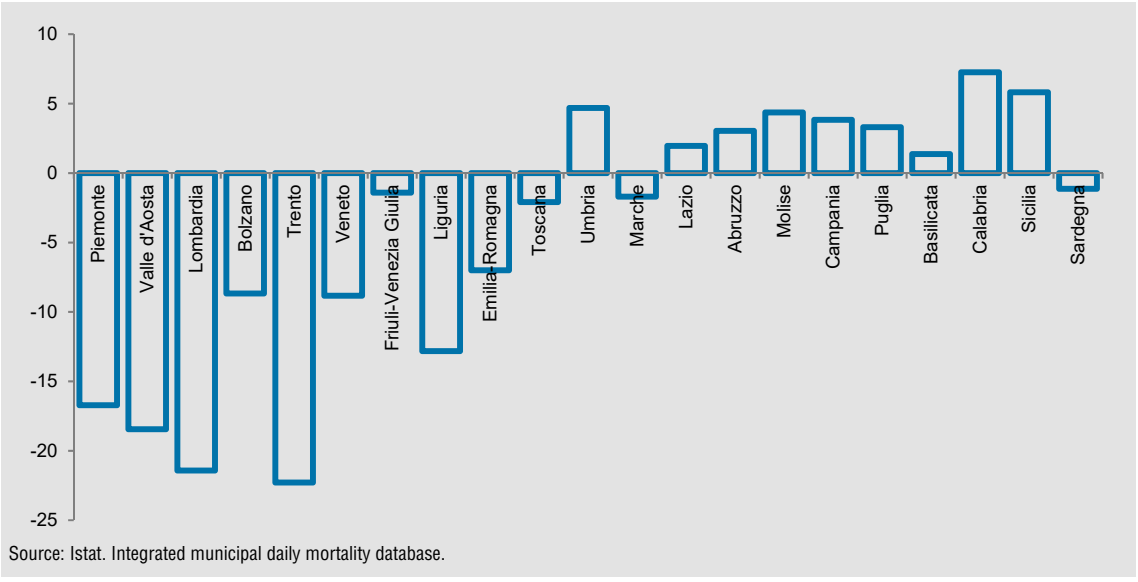


Source: Istat. Integrated municipal daily mortality database.

72% of the excess mortality was due to deaths of people aged 80 and over

Considering the age groups, the largest contribution to the excess of deaths in 2021, compared to the average of the years 2015-2019, was due to the increase in deaths in the population aged 80 and over, which explains the 72% of the overall excess mortality; a total of 455,170 people in this age group died (about 46,000 more than the average for the five-year period 15-19). The increase in mortality in the 65-79 age group explains a further 21% of the excess mortality; in absolute terms, the increase for this age group, compared to the average figure for the years 2015-2019, was more than 13 thousand deaths (for a total of 177,937 deaths in 2021).
However, it was precisely in the age group most affected by mortality in 2020 that the biggest drop in deaths was observed when comparing 2021 with 2020: over 37,000 fewer deaths in the age group 65 and over in the last year. On the contrary, in the population under 65 years of age deaths increase over the previous year, albeit by a very small amount (+745).
In the northern regions, particularly in Lombardia and the autonomous province of Trento, deaths among population aged 80 and over in 2021 fell by more than 20% compared with 2020. A more moderate decrease was also observed in the same age group in Marche and Sardegna, regions in the macro-areas of Central and Southern Italy affected by the first wave of the pandemic in 2020 (Figure 3). In the rest of Italy, however, the increase in deaths affected all age groups.

Figure 3. Percentage variations in deaths of the age group 80 years and over by region. Year 2021. Percentage variations compared to 2020

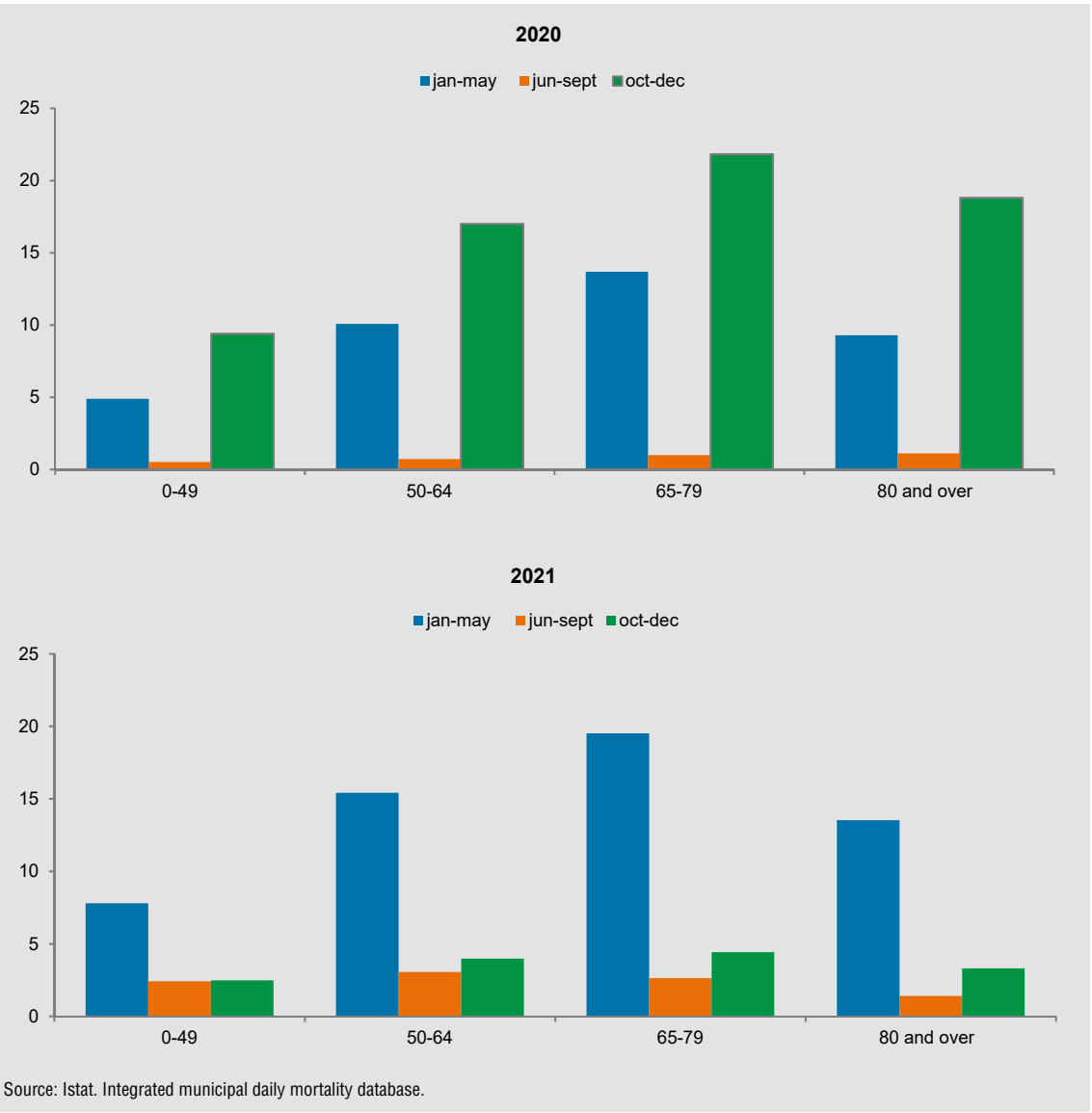


Source: Istat. Integrated municipal daily mortality database.

The deaths reported to integrated surveillance considered to be related to COVID-19 in 2021 amounted to 59,000 and represented 8.3% of total deaths from all causes, a proportion that is down from the previous year when there were more than 77,000, 10.3% of the total. The North remains the area with the highest proportion of COVID-19 deaths out of total deaths, with an average value for the area for 2021 of 9%. However, compared to the previous year there was a decrease in this percentage: almost all northern regions had values above 10% in 2020, with peaks of over 20% in Valle d'Aosta. In contrast, in the central

and southern regions, the share increased in 2021, compared to 2020, from 6.9% to 7.7% in the Centre and from 5.3% to 7.6% in the South.
In 2020, on a national average the 65-79 age group had the highest share of COVID deaths on total deaths (12.6%), followed by the oldest age group (9.8%) and the 50-64 age group (9.3%). In 2021, the 65-79 age group still had the highest percentage (11.0%), while the 50-64 age group (8.9%) outnumbered the 80+ age group (7.3%), reflecting what happened in the Centre and especially in the South and Islands.
The impact of COVID-19 deaths on total mortality in the year 2021, for all age groups, was mainly due to the January-May period when the impact of vaccination was still limited, while in 2020 it was evident that the second phase (October-December) had the highest proportion of COVID-19 deaths out of total deaths. However, it should be noted that in the first two months of 2020 the impact of the COVID-19 epidemic still did not exist (Figure 4).

Figure 4. Ratio of COVID-19 deaths out of total deaths by age and period, Italy. Years 2020 and 2021. Percentages

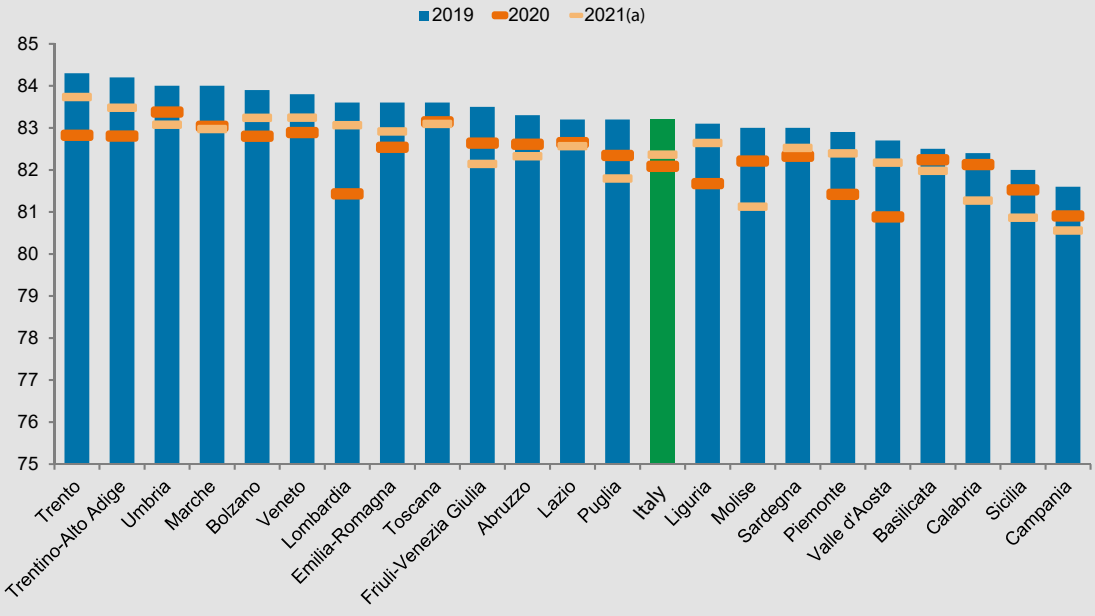


Source: Istat. Integrated municipal daily mortality database.

Slight recovery in life expectancy at birth in 2021, after falling by more than 1 year in 2020

Excess mortality caused life expectancy at birth to fall by more than 1 year nationwide in 2020 (from 83.2 in 2019 to 82.1 years in 2020), but provisional estimates for 2021 suggested a hint of recovery with an estimated figure of 82.4 years. The start of this moderate recovery was due to the fact that the excess mortality, although also recorded in Italy in 2021 compared to the five-year period 2015-2019, was less severe than 2020 excess mortality. This was thanks to the massive vaccination campaign - which, however, began to produce positive effects after a certain threshold of coverage, i.e. in late spring - and to the improvement in treatment, despite the wider spread of the epidemic and its variants.
In the North-west, almost 2 years of expected life expectancy at birth were lost in 2020 alone (-1.9 years) compared to 2019, and this affected all regions of this macro-area, peaking in Lombardia at -2.2 years. In the North-east, the reduction was in line with the Italian average (-1.1 years), but higher in the autonomous province of Trento (-1.5 years). In the Centre and the Southern Italy, the decrease was smaller (-0.6 years), with a spread ranging from -0.9 years for Puglia to -0.3 for Calabria and Basilicata. The regional ranking was, thus, overturned in 2020: Lombardia plummeted from seventh place in 2019 to fourth to last, while Campania, always at the bottom of the regional ranking for decades, became second to last, giving way to Valle d'Aosta (Figure 5). However, the estimates for 2021 showed important recoveries, especially in the worst affected region, Lombardia, and in other regions of the North-west, as well as in the autonomous provinces of Trento and Bolzano. On the other hand, the values for Friuli-Venezia Giulia and for some regions of Southern Italy, in particular Molise, Calabria, Puglia and Sicilia, were estimated to worsen still further in 2021, compared to both 2020 and 2019, losing more than 1 year of average life expectancy compared to 2019 (from 1.1 to 1.4 if not 2 in the case of Molise).

Figure 5. Life expectancy at birth by region. Years 2019, 2020 and 2021 (a). In years



Source: Istat, Mortality tables of the Italian population.
(a) The data for 2021 is a provisional estimate.

As is well known, the pandemic crisis has claimed more victims among men than women. Men, who had reached a record 81.1 years of life expectancy at birth in 2019, lost 1.3 years in 2020, eroding the acquired longevity progress and falling back to the 2012 figure. Women, who also peaked at 85.4 years in 2019, fell back to the 2015 figure of 84.5 years, losing 0.9 years. For 2021, estimates forecast a recovery of about 3 months for men and 3 for women. But at the territorial level, the net recovery in 2021 in the North of the country (with the exception of a few regions) for both men and women was contrasted by the further decrease in life expectancy at birth in the South and Islands for both genders; thus, the geographical differences between the North and the South of the country increased (they were 1.1 years in 2019 for men and 1.2 for women, increasing for both to -1.6 years).

In 2021, the improvement in healthy life expectancy observed in 2020 decreased among women

Despite the clear decline in expected life years, the indicator of healthy life expectancy at birth improved in 2020 due to an increase in the prevalence of perceived good health recorded in the context of the pandemic. Analyses conducted on the trend in perceived health in 2020, which we recall summarises the broader concept of health as defined by the WHO[2], have shown the strong sensitivity of this indicator in the different contexts of health emergencies caused by the pandemic. In fact, this was the case in many other European countries, where increases in perceived good health were mainly observed[3], although there were exceptions for a smaller number of countries, for which a decrease was recorded instead. The share of people in Italy who declared that they feel well or very well reached 72.0% in 2020, an increase of 3 percentage points in just one year, while the share of those who reported more neutral evaluations - neither positive nor negative - regarding their health decreased. The increases are widespread and concern both genders, although they are far more significant among adults aged 35-54[4] (+5 percentage points), particularly among women.
In 2021, this marked improvement in overall perceived good health declines by about 1 percentage point to 71.0%, smoothing out the exceptional increases recorded among adults. At the same time, there were increases in incidence in the older population (75 years and older), particularly among men, which were not apparent in 2020.
Indeed, the healthy life expectancy indicator, calculated in the pandemic and post-crisis years, shows a breaking point in the stability that has never been recorded before; these are exceptional years compared to the past and should be interpreted with due caution. In 2020, life expectancy in good health was estimated at 61 years, with a sudden gain of 2.4 years compared to 2019 (it was 58.6 years), so the proportion of years to be lived in good health increased to 74.3% (it was 70.4% in 2019), also due to the opposite trends of the two components of the indicator (life expectancy and prevalence of perceived good health).

2 The indicator originates from the WHO-recommended question "How is your health in general", to capture the broader concept of health, which includes the different dimensions of physical, mental and relational health, including the emotional one that reacts more in times of crisis. An extensive literature documents the relevant predictive factor of the mirror indicator "perceived poor health" due to mortality, hospitalisation, loss of self-sufficiency (See https://www4.istat.it/it/files/2015/11/Rapporto_salute_26_11_2013_01.pdf).
3 Eurostat Database: https://ec.europa.eu/eurostat/databrowser/view/hlth_silc_02/default/table?lang=en
4 See Istat, *Annual Report 2021* (https://www.istat.it/storage/rapporto-annuale/2021/Rapporto_Annuale_2021.pdf).

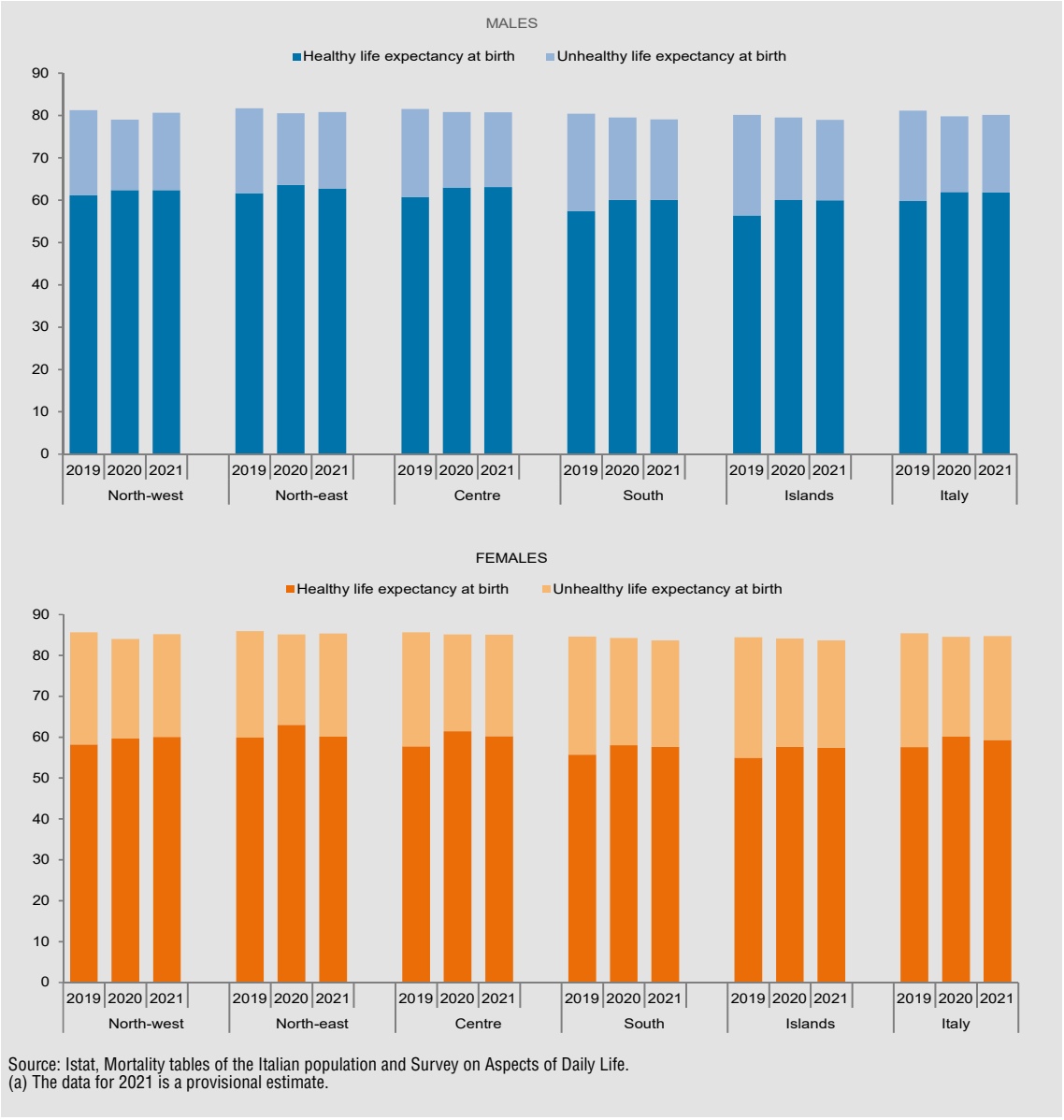
In 2021, on the contrary, the combination of these two components and the trends with respect to 2020 resulted in a slight readjustment downwards, with the value for men and women being 60.5 years, and thus a reduction of about 6 months compared to 2020.

Healthy life expectancy stable for men, falling for women

For men in Italy, the value of healthy life expectancy at birth in 2020 stood at 61.9 years (+2.1 years compared to 2019), an increase that would also be confirmed in 2021 with an estimated value of 61.8 years, compared to a life expectancy of 79.8 years in 2020 and 80.1 in 2021. For women in 2020, healthy life expectancy at birth reached 60.1 years (+2.5 years compared to 2019), but in 2021 the value was estimated at 59.3 years, i.e. down by about 10 months, compared to the average life expectancy of 84.7 years.
Comparing what happened in the various geographic areas in 2020 and 2021, compared to 2019, and differentiating by gender, the picture that emerges is further articulated (Figure 6). The epidemic waves affected the areas of the country differentially: in 2020 the excess mortality mainly affected the North, while in 2021 almost all areas were affected, but mostly the regions of the Southern Italy and the North-east.
For men in the North-east, i.e. those most affected in the first phase of the pandemic, the gain in years to be lived in good health compared to other areas of the country was the most modest in 2020 (+1.2 years), for an indicator value of 62.3 years. In 2021, although they recovered more than two-thirds of the life years lost in 2020, they only increased the number of years to be lived not in good health, given that the indicator of expected healthy years remained stable at 62.3 years, although higher than in 2019 (it was 61.1 years). On the other hand, men in the North-east, with an estimated gain of about 2 years in good health in 2020, reached 63.6 years (the highest level ever recorded), but in 2021 this value settled down by almost 1 year (62.7 years), with a recovery of life years lost of only 3 months compared to the year lost between 2020 and 2019. Nevertheless, in central Italy, men, besides having a smaller reduction in life expectancy than in the North, in both pandemic years only recovered healthy life years at the cost of unhealthy ones: in 2019 the former were equal to 60.7 out of a total of 81.5 expected life years, in 2021 (similarly to 2020) they increased to 63.1 out of a total of 80.7 years. In contrast, residents in the South and the Islands gained an average of 3 years in 2020, thus reaching 60 years of expected life expectancy in good health at birth, almost halving their gap with the Northern figure of 2019. These values are reconfirmed for 2021, but, since at the same time, more years of expected life expectancy had been lost, the years lost since 2019 relate to life expectancy at birth in poor health (almost -4 years in the South and -4.7 in the Islands compared to 2019).
Although women living in the North-west lost the most in terms of years to live in 2020 (-1.6 years) compared to other areas of the country, they gained almost as many years in good health, reaching 60 years on average in 2021, i.e. 70.5% of the years to live will be lived in good health compared to 68% in 2019. In the North-east, the highest average number of years to be lived in good health for women was confirmed in 2020 (63 years), with an estimated gain compared to 2019 of more than 3 years, despite the drop in life expectancy (-0.8 years). In 2021, however, this data was completely in line with that of 2019, at 60.1, and they are the only population group that does not record even slight increases for this indicator compared to the pre-pandemic period. On the other hand, women residing in

the Centre confirmed the increases already recorded in 2020 in healthy life expectancy for 2021, reaching 60.2 years (compared with 57.7 in 2019), for a share of 70.8% of the years to be lived in good health (it was 67.4% in 2019). In the South and Islands, the increases recorded in 2020, although with slight readjustments in 2021, however, did not reduce the well-known geographical differences in healthy life expectancy compared to the North. Women in the South continued to lose years of life in 2021 and, just as for men in the same geographic area, they mainly lost years of life in poor health, as the share of years to be lived in good health increased compared to 2019 from 65.9% to 68.9% in 2021, when it was estimated at 57.6 years (it was 55.7 in 2019). For women from the Islands, these trends are also repeated, but in 2019 they had lower levels of healthy life expectancy (54.9 years) and thus increased the share of years to be lived in good health (from 65.1% to 68.6% in 2021).

Figure 6. Life expectancy at birth and healthy life expectancy at birth by geographic area and gender. Years 2019, 2020 and 2021 (a). In years



Source: Istat, Mortality tables of the Italian population and Survey on Aspects of Daily Life.
(a) The data for 2021 is a provisional estimate.

More moderate impact of the pandemic on life expectancy without limitations at age 65

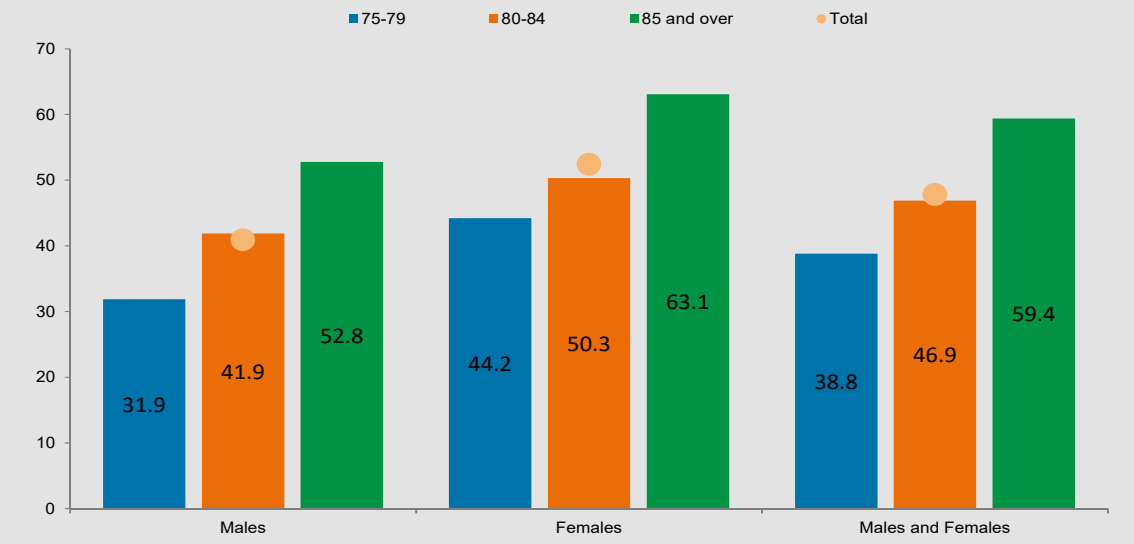
The pandemic shock seems to have had a more moderate impact on life expectancy without limitations at 65 years of age. For women, the changes are minimal, life expectancy without limitations at age 65 fell from 9.8 in 2019 to 9.7 in 2020 and to 9.6 years in 2021. For older men, the decline was greater: in 2020 compared to 2019, life expectancy without limitations fell from 10.2 to 9.5 years, although life expectancy at 65 years of age fell by 1.2 years, but the greatest reduction concerned men in the South, who lost 1 year of life expectancy without limitations at age 65, compared to a reduction in life expectancy of 0.7 years. The 2021 figure, however, showed a recovery only for elderly men in the North-west, who, in addition to recovering the years lost in 2020, gained about 6 months of life without limitations after the two years of the pandemic, the same as those who lost residents in the Islands in 2021, while in the other geographic areas the values for this indicator did not change. In particular, there is a reduction in the first year of the pandemic for elderly women in the North (-0.8 in the North-west and -0.5 in the North-east), who, unlike their male peers, were not able to recover in 2021, while the only slight increase concerned women resident on the Islands.
It will inevitably be a question of monitoring future effects in order to understand to what extent this pandemic, with its direct effects, e.g. attributable to the long-COVID, or indirect effects, e.g. due to the greater difficulty of access with the postponement of treatment, may lead to an excessive exposure to the risk of disease in future years, compromising the gains in health and years of independent life that have been achieved in these decades. If, on the contrary, the years of life lost and in better health were recovered in a short period of time, another hypothesised post-COVID scenario would emerge, namely that the impact of the pandemic had a disruptive effect, but affected mainly the most fragile population, preserving even elderly but more resilient population profiles.

Almost half of the elderly are in poor health, the percentage has been declining in recent years

The increase in life expectancy of the population, together with the decrease in the birth rate, have strongly characterised Italy in recent decades, with a significant impact on the age structure of the population. As of 1 January 2021, there were more than 7 million residents in Italy aged 75 years and over (there were about 5 million 900 thousand in 2010), corresponding to the 11.9% of the total population. The ongoing pandemic has had a strong impact on the elderly population, as the most fragile segment in terms of health conditions. In particular, in 2021 it was observed that 47.8% of the population aged 75 and over was either multi-chronic (suffering from three or more chronic diseases) or had severe limitations in the activities that people usually do. This share was higher for those living in the South and Islands (55.2% compared to 44.1% in the North and 45.2% in the Centre) and among women (52.4% compared to 40.9% among men) and reached 59.4% among people aged 85 and over (compared to 38.8% among people aged 75-79) (Figure 7).
Since 2014, there has been a reduction in the proportion of elderly people with severe limitations or in a multi-chronic condition (they were around 54% in 2013) due to the gen-

eral improvement in the health of the population, but levels among the elderly population still remain high. This reduction was higher among women (-8.4 percentage points) than among men (-2 percentage points).
Hypertension and osteoarticular problems (osteoarthritis/arthritis) were among the chronic diseases that most characterised this age group, which, alone or in conjunction with other chronic diseases, affected 1 in 2 elderly persons in this age group. This was followed by osteoporosis (30.5%), diabetes (20.8%) and certain diseases affecting the nervous system (15.9%). In this group,[5] Alzheimer's disease and senile dementia affected almost 1 in 10 elderly persons (8.3%), while Parkinson's disease affected a lower percentage at 2.9%.
The proportion of elderly people in poor health was lower among those with at least a high school diploma (32.8% among men and 42.8% among women), while it increased among those with at most a primary school diploma (44.7% among men and 56.1% among women).

Figure 7. Persons aged 75 and over with three or more chronic conditions and/or severe limitations that last for at least six months in carrying out the activities that people usually do, by gender and age group. Year 2021. Percentages



Source: Istat, Survey on Aspects of Daily Life

Mental well-being worsened among adolescents and people living in the North-west

The World Health Organisation describes mental health as an essential component of health, defining it as the state of well-being that enables an individual to realise his or her abilities, sustain normal levels of stress in daily life, and work productively, and contribute to his or

5 From 2021 onwards, in addition to the 15 chronic diseases recorded from 1993 onwards in the "Aspects of daily life" survey (diabetes, arterial hypertension, heart attack, angina pectoris or other diseases of the heart, chronic bronchitis/ emphysema/respiratory insufficiency, bronchial asthma, allergic diseases, cancer - including lymphoma or leukaemia -, gastric or duodenal ulcer, stones in the liver and gallstones, liver cirrhosis, kidney stones, osteoarthritis/arthritis, osteoporosis, nervous disorders), stroke, Parkinson's disease and Alzheimer's/dementia have also been included. These last two conditions are, as of 2021, considered within the "nervous disorders" category and contribute to the creation of the indicator of multi-chronicity and/or severe limitations, whereas up to 2020 they were not included in this category.

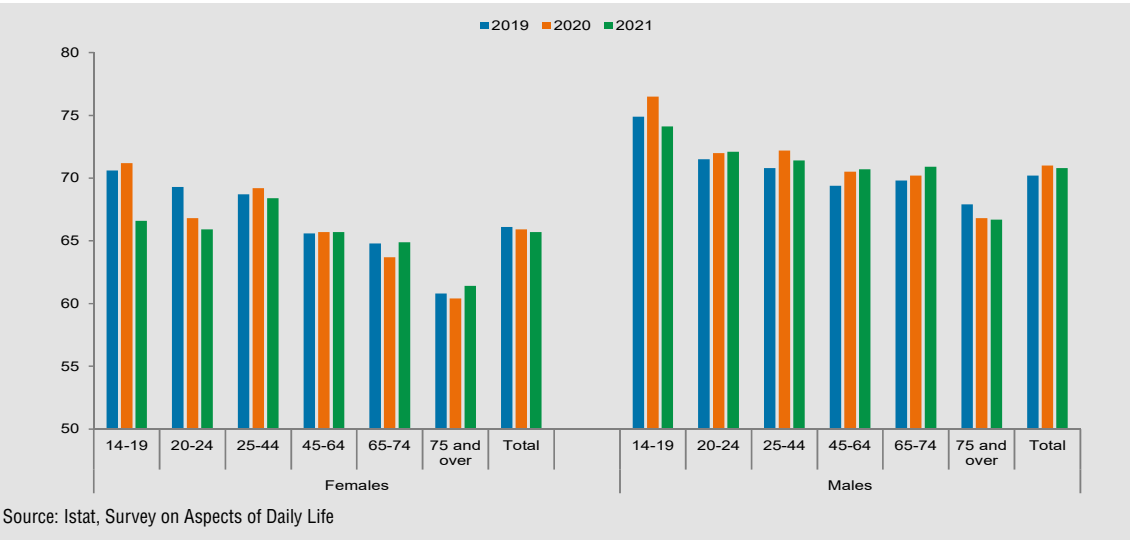
her community[6]. The analysis of the mental health index[7], although within the limits of its synthetic measurement, takes on particular relevance in the two pandemic years, in order to attempt to monitor the effects on the psychological and emotional component, which is more subject to the considerable changes in social and relational life that occurred during this period[8].

In 2021, the index assumed the value of 68.4 in Italy, and was on the whole stable compared to 2019 and 2020 (when it was 68.4 and 68.8 respectively)[9].

However, it is very useful to analyse its trend by population subgroups and by territory. In 2021, the index decreased among women, highlighting a deterioration in mental health, while it increased slightly among men, with the result that the gender gap widened further over time, from 3.7 to 4.9 points lower for women between 2019 and 2021.

Mental well-being generally deteriorates as age increases, but in 2021 the gap between younger and older people narrowed to -6.8 points when comparing the over-75s to 14-19 year-olds, the gap was -10.9 points in 2020. The narrowing of the gap depends on a deterioration in psychological well-being among young people in 2021. In fact, after an improvement in 2020, in the second year of the pandemic the mental health index dropped sharply in the 14-19 age group for both sexes, to a score of 66.6 for girls (-4.6 points compared to 2020) and 74.1 for boys (-2.4 points compared to 2020), respectively. Among women, a deterioration in mental health was also observed in the 20-24 age group (-3.4 compared to 2019), while in the other age groups substantial stability was observed, if not a slight improvement for adult men and young seniors (Figure 8).

Figure 8. Mental health index for persons aged 14 and over by gender and age groups. Years 2019, 2020 and 2021. Average scores



Source: Istat, Survey on Aspects of Daily Life

6 https://www.who.int/en/news-room/fact-sheets/detail/mental-health-strengthening-our-response

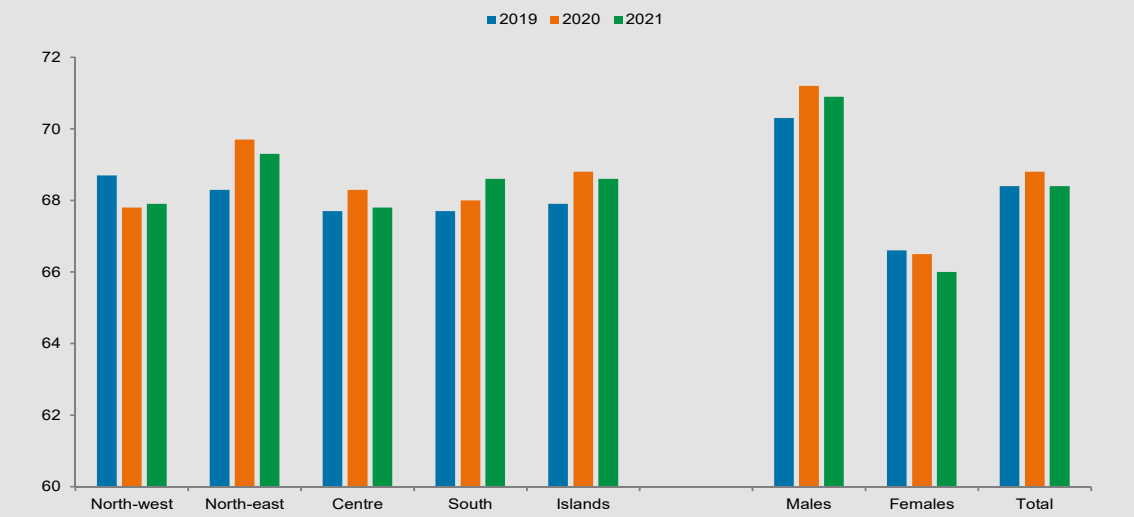
7 Among the psychometric-instruments developed at the international level, the SF-36 Mental Health Index (MH), based on the aggregation of scores by each individual in response to five specific questions, is one of the Bes indicators. The index provides a measure of individuals' psychological distress and includes states related to anxiety and depression (Keller, S.D., J.E. Ware, P.M. Bentler *et al.* 1998. "Use of structural equation modelling to test the construct validity of the SF-36 Health Survey in ten countries: Results from the IQOLA Project". *Journal of Clinical Epidemiology*. Volume 51, No. 11: 1179-1188).

8 Investigations are underway, also at international level, to identify shared tools that can help to better capture the multiple specificities of this dimension of health. See https://www.oecd.org/wise/

9 As the score increases, taking values between 0 and 100, the assessment of mental health conditions improves.

The territorial analysis showed a deterioration in psychological well-being conditions in the North-west in 2020 that also persisted in the second year of the pandemic, with the standardised index of mental health falling from 68.7 in 2019 to 67.9 in 2020-2021. The trend was different in the North-east, the Centre and the Islands, where the index improved in 2020 and then fell in 2021; finally, in the South, the index improved, although slightly, in both years (Figure 9). The decline observed in the Centre-North regions in the two pandemic years was particularly evident among the youngest: among 14 to 24-year-olds living in the North-west, the mental health score dropped from 71 points in 2019 to 66.6 in 2021.

Figure 9. Mental health index for persons aged 14 and over by geographic area. Years 2019, 2020 and 2021. Average scores



Source: Istat, Survey on Aspects of Daily Life

Avoidable mortality is reducing over time, especially among men

The avoidable mortality indicator refers to deaths of people under 75 that could be significantly reduced.
This indicator consists of two components, treatable mortality and preventable mortality, and refers to those causes of death that can be reduced through adequate and accessible health care as well as through the diffusion of healthier lifestyles in the population and the reduction of environmental risk factors. In particular, preventable mortality refers to mortality that can be avoided by effective primary prevention and public health interventions. Treatable mortality refers to those deaths that could be contained through timely and effective health care in terms of secondary prevention and appropriate health treatment[10]. In 2016[11], these types of causes accounted for the deaths of about 1 million people in Europe (equivalent to a rate of 25.4 per 10,000 inhabitants).

10 The definition of the lists of treatable and preventable causes is based on the joint OECD/Eurostat work, revised in November 2019. In this definition, the age up to which a death is considered preventable is set at 74 years to reflect current life expectancy. The list of diseases/conditions and the age limit reflect current health expectations, medical technology and knowledge, and developments in public health policy and, therefore, may be subject to change in the future.

11 The latest available data referring to the EU average is for 2016. Provisional data for 2018 are available for some countries, but the overall EU-wide figure is not available.

In 2019, the standardised avoidable mortality rate was 16.5 per 10,000 residents for Italy, placing it in a more advantageous position within the European ranking. In particular, when considering preventable mortality, the mortality rate was 10.1 per 10,000 and when considering treatable mortality 6.4 per 10,000. Compared to 2018, a reduction was observed especially in the preventable component (it was 10.5 per 10,000 in 2018), while treatable mortality, although slightly decreasing, showed more stability than in 2018 (it was 6.5 per 10,000 inhabitants).

Gender differences are considerable, with higher values of avoidable mortality among men than among women (21.7 per 10,000 inhabitants against 11.6 - Figure 10). In particular, the male disadvantage is mainly explained by the "preventable" component, i.e. that which is more closely linked to lifestyles (e.g. alcohol abuse, greater propensity to smoke, inadequate diet) and to more risky behaviour (accidental events, work activity, etc.). For preventable mortality, the value for men was, in fact, 14.9 per 10,000, and for women 5.6; for treatable mortality, the rate for men was 6.8 per 10,000, and for women 6.0.

A strong reduction in avoidable mortality has been observed over time (the standardised rate was 23.4 per 10,000 in 2005), especially in the preventable component (it was 14.7 per 10,000 in 2005). This is due to the decrease in mortality from some of the main causes: for example deaths from lung cancer fell (under 75 years of age from 18,332 in 2005 to 15,658 in 2019) and also deaths from ischaemic heart disease, which fell significantly from 2005 to 2019 (from 18,826 fell to 11,781). The decrease for these causes of death was observed especially among men, resulting in a narrowing of the gender gap.

The avoidable mortality rate among women has decreased less over time (from 15.2 per 10,000 residents in 2005 to 11.6 per 10,000 residents in 2019).

Figure 10. Standardised rates of avoidable mortality (preventable and treatable) of persons aged 0-74 years by gender. Years 2005-2019. Per 10,000 residents

Source: Istat, For deaths: Survey of deaths and causes of death. For population: Survey of municipal resident population by sex, year of birth and marital status

Different regional profiles for the two components of preventable mortality

Different regional profiles are observed with respect to the two components of avoidable (preventable and treatable) mortality. It is interesting to note that some regions have only one component that is higher than the national average and not both, indicating the need for differentiated policies across the territory.
The most critical situations are observed in Campania, followed by Calabria, Sicilia, Lazio and Piemonte, where both preventable and treatable mortality rates are higher than average.
Sardegna, Molise, Friuli-Venezia Giulia and especially Valle d'Aosta present preventable mortality rates above the national average and, conversely, treatable mortality rates below the observed average.
Puglia, Abruzzo and Basilicata, on the other hand, have treatable mortality rates above the national average and, on the contrary, preventable mortality rates below the average value.
A better picture is observed in the autonomous province of Trento followed by the autonomous province of Bolzano, Marche, Umbria, Veneto, Emilia-Romagna, Lombardia and Toscana where, for both components of preventable mortality, the values are below the general average. Finally, Liguria has values overlapping with the national average.

Infant mortality and mortality from malignant tumours among adults decreased, while mortality from dementia and diseases of the nervous system increased

The infant mortality rate in 2019 was 2.5 per 1,000 live births and was down from the figure recorded in 2018 (2.9 per 1,000 live births), a year in which, unlike in 2019, the value recorded was up from the previous two years. Infant mortality values were higher for boys than for girls (2.7 per 1,000 live births for boys, 2.3 for girls).
The greatest contribution to the decrease came from the South and Islands, where the rate went from 3.7 to 2.9 per 1,000 live births, and from the Centre, where the rate went from 2.6 to 2.0 per 1,000 live births. In the North, however, the rate remained constant compared to 2017 and 2018 (2.4 per 1,000).
In adulthood (people aged 20-64), mortality from malignant tumours, which is considered premature, is particularly relevant. In 2019, the mortality rate for these diseases was 8.1 per 10,000 residents, a value that has gradually decreased in recent years. In 2019, the reduction affected both women and men: the mortality rate from malignant tumours for women stood at 7.5 per 10,000 residents (it was 7.7 in 2018), while that of men stood at 8.8 per 10,000 residents (it was 9.3 in 2018). At the territorial level, higher values of mortality from malignant tumours were confirmed also in 2019 in the South and Islands (8.7 per 10,000 inhabitants against 7.5 in the North-east and 8.0 in the North-west and Centre).
The highest value of the indicator, for both men and women, was recorded in Campania (10.5 and 9 per 10,000 inhabitants, respectively), but while a reduction was observed for men in this region compared to the previous year (it was 11.1 in 2018), on the contrary, a slight increase was observed for women (it was 8.9 in 2018), which cancelled out the gain that had been observed for this cause in 2018.
In 2020, the death rate from road accidents among young people stood at 0.5 per 10,000 residents aged 15-34. Compared to the period 2013-2019, in which the indicator had remained completely stable (0.7 deaths per 10,000 residents aged 15-34), a reduction was

observed in 2020, partly attributable to lower mobility in the area at certain times of the year, due to travel restrictions to contain the spread of the COVID-19 pandemic.
A strong gender difference is also confirmed for 2020, with a value of 0.8 per 10,000 residents among males and 0.2 among females. The reduction in the indicator in 2020 was only observed for men (the rate was 1.1 per 10 thousand in 2019), while no change was recorded among women.
From a territorial point of view, the mortality rate for road accidents in 2020 shows almost completely overlapping values in the various territorial macro-areas, only in the North-west is a slightly lower value observed (0.4 per 10,000 residents aged 15-34).
In a country like Italy, characterised by a very high life expectancy and therefore a considerable proportion of elderly people, diseases such as dementia and diseases of the nervous system, for which the mortality rate in 2019 was 34 per 10,000 inhabitants, are widespread. Women have a mortality rate of 32.7, men 35.1.
After an almost constant increase from 2015 until 2017 and a subsequent slight decrease in 2018, an increase is observed in 2019 compared to the previous year (when the mortality rate was 33.3 per 10,000 inhabitants). The increase affected both men and women equally.
The highest mortality rates due to dementia and diseases of the nervous system are found mainly in the North (36.7 per 10,000 inhabitants in the North-west and 36.0 in the North-east) and on the Islands (34.2 per 10,000 inhabitants), and less so in the Centre (32.4 per 10,000 inhabitants) and in the South (29.5 per 10,000 inhabitants).

Sedentary lifestyles in the total population decreased, but increased among adolescents

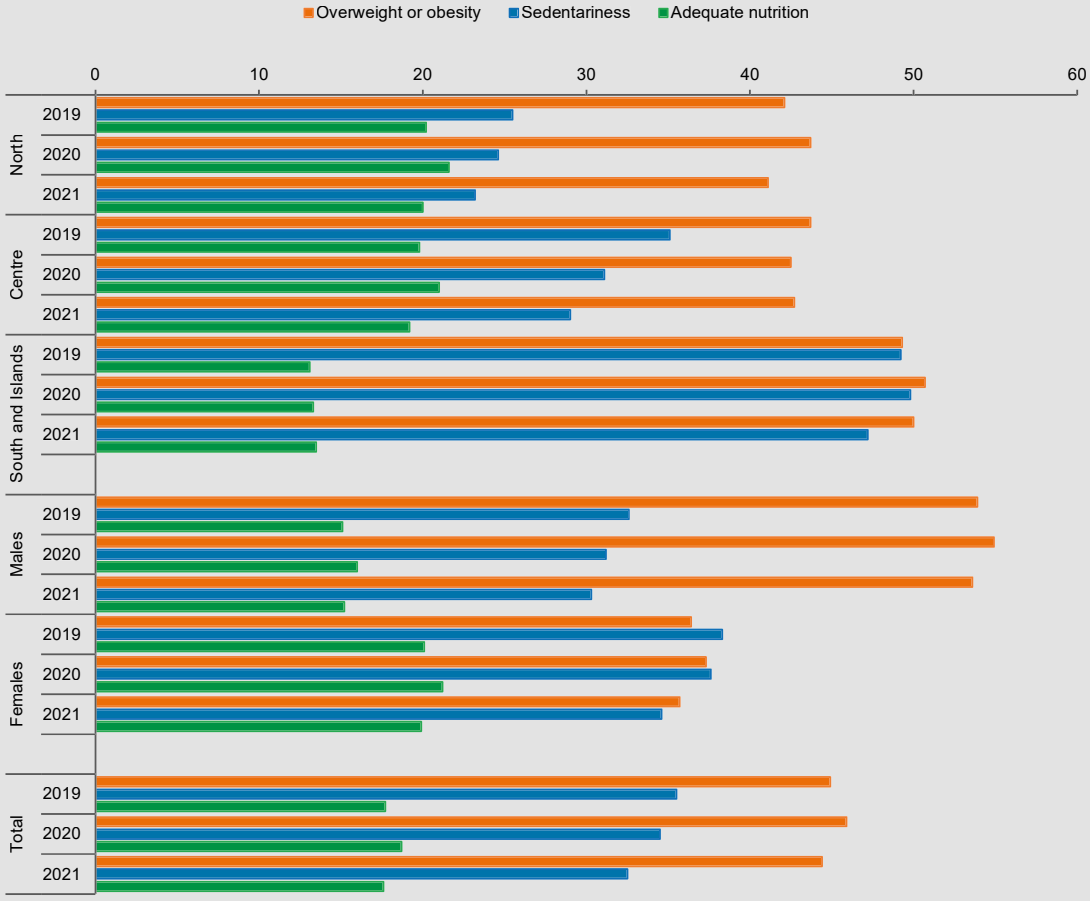
The two-year period 2020-2021 was strongly characterised by the spread of the COVID-19 pandemic. The regulations implemented in order to contain the spread of the virus significantly affected many aspects of everyday life. Especially during the phase 1 lockdown, business closures and imposed travel restrictions led to major changes in the population's lifestyles. Subsequently, in the later stages of the pandemic, people gradually began to return to daily life activities in a similar way as in the pre-COVID period, although the effects of the pandemic continued to affect people's lives and the return to normality at the end of 2021 had not yet been fully achieved.
In 2021, the share of sedentary people was 32.5% (Figure 11). Women were more sedentary than men (34.6% vs. 30.3%), although the gender gap has been narrowing over time (it was 7.8 percentage points in 2010 and fell to 4.3 percentage points in 2021). Sedentariness increases with age: it affects 2 out of 10 people among adolescents and young people up to 24 years of age to almost 7 out of 10 among the population aged 75 and over.
In 2021, the indicator showed a further improvement compared to what was observed in 2020 (34.5%) and 2019 (35.5%), in line with the trend observed since 2014. However, the decrease did not affect 14-19-year-olds for whom there was a significant increase in sedentariness from 18.6% to 20.9%. On the other hand, a substantial decrease in the proportion of sedentary people was observed among the adult population aged 45-59 (-3.2 percentage points) and among the elderly population aged 75 and over (-4.3 percentage points).
What was observed especially in 2021, but which was also partly evident in 2020, was the decrease in continuous sports activity, especially among the very young, aged 14-24, and at the same time the growth of occasional sports activity and the habit of performing physical activities. These forms of activity are often characterised by the fact that they are

carried out in an unstructured manner and outside gyms and sports centres which, during the pandemic period, experienced long periods of closure due to the restrictions imposed to contain the virus.
A strong North-South territorial gradient was also confirmed in 2021, with sedentary rates reaching 23.2% in the northern regions and 47.2% in the southern regions. Compared to 2020, there was a significant decrease in the proportion of sedentary people across the whole territory, but more so in the southern regions (-2.6 percentage points) and in the Centre macro area (-2.1 percentage points).

Slight and steady increase in the proportion of people suffering from obesity over the two-year period

The analysis of excess body weight showed a value of 44.4% among people aged 18 years and over in 2021. This figure was 1.5 percentage points lower than in 2020 (45.9%). Despite the fact that there has been a fluctuation in the overall excess weight indicator over the last 2 years (increased in 2020 by 1 percentage point and decreased in 2021 by a slightly higher amount), what can be observed when analysing the two components of overweight and obesity of which the indicator is composed, was a fluctuation only in the proportion of people in an overweight condition, which in 2020 reached 34.9% (compared with 34.4% in 2019) and in 2021 fell by 1.9 percentage points (to 33.0%). The proportion of people suffering from obesity shows a slight but steady increase, which reached 11.4% in 2021 compared to 10.5% in 2019 and 10.9% in 2020.
Men were found to be more overweight than women (53.6% vs. 35.7%). Excess weight was higher with increasing age (as early as the 45-54 age group, it affected almost 5 out of 10 people) and in the regions of Southern Italy (50.0%). Compared to 2020, there was a decrease in the share of people who were overweight for both men and women, with more significant levels among adults aged 50-64 years (-3 percentage points) and especially in the northern regions (from 43.7% to 41.1%), while in the central and southern regions the situation remained more or less stable.
It is apparent that sedentary behaviour is often associated with excess body weight. These risk factors, alone or in association, generally concern about 60% of the adult population, with a share of about 20% in which both forms of behaviour overlap.
The protective role of educational qualifications was confirmed, with a greater focus on healthier behaviour among those with higher educational qualifications. For example, a higher proportion of overweight people was observed among those with a low educational qualification (54.6%), compared to those with a university degree or higher (33.7%). Similarly, a higher proportion of sedentary people was observed among those with a low educational qualification (48.4%), compared to those with at least a university degree (15.8%).

Figure 11. Standardised proportion of sedentary people aged 14 years and over, standardised proportion of people aged 18 years and over who are overweight/obese, and standardised proportion of people aged 3 years and over who consume at least 4 portions of fruit and/or vegetables daily by geographic area and gender. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of Daily Life

Fruit and/or vegetable consumption decreased

In terms of healthier eating styles, in 2021 the share of the population aged 3 and over who consumed at least 4 portions of fruit and/or vegetables daily was 17.6%. This share was down by about 1 percentage point compared to the previous year, tending to realign with what was observed in 2019 and continuing to remain at lower levels than in 2015-2018, when this indicator reached almost 20%.

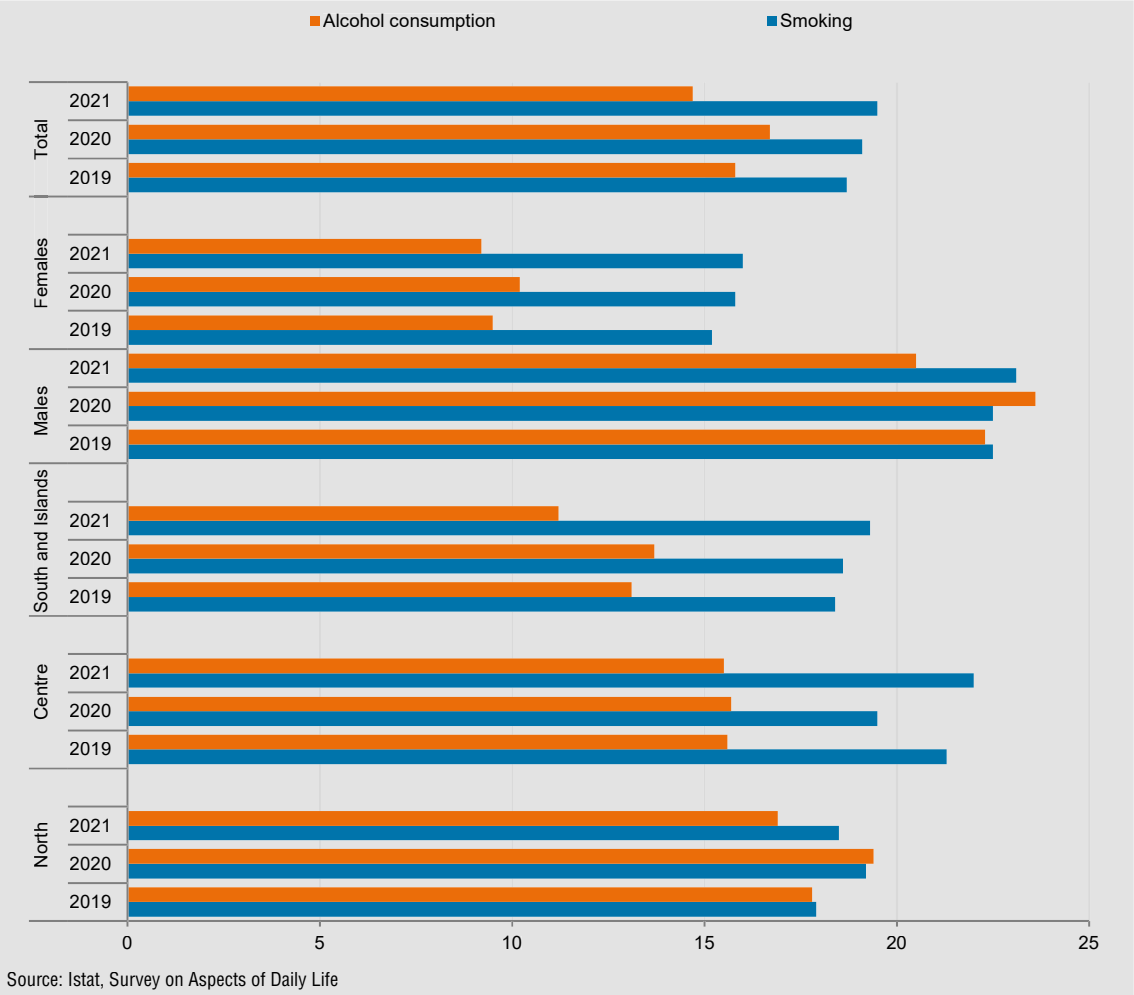
Higher proportions of consumers of at least four portions of fruit and/or vegetables per day were observed in the northern (20.0%) and central (19.2%) regions than in the South and Islands (13.5%). However, while in the South and in the Islands there was no decrease compared to 2020, on the other hand, in the Centre-north the share of daily consumers of 4 or more portions of fruit and/or vegetables decreased by 1.7 percentage points.

More virtuous behaviour was confirmed among women than men (19.9% vs. 15.2%), although the drop recorded over the last year was greater among women (-1.3 percentage points) than men (-0.8 percentage points).

Smoking rates remained stable, increasing only in central Italy

In 2021, the proportion of smokers aged 14 years and over was 19.5%, which is stable compared to 2020 (19.1%) and slightly higher than in 2019 (18.7%) (Figure 12).
In 2021, smokers increased in central Italian regions (from 19.5% to 22%), while they remained more or less stable in Northern Italy and in the South and Islands.
Smoking was more prevalent among men (23.1 % vs. 16 %); however, this gap has narrowed considerably over time (it was 11.2 percentage points in 2010 and reached 7.1 percentage points in 2021).

Figure 12. Standardised proportion of people aged 14 and over who report currently smoking and standardised proportion of people aged 14 and over who have at least one risk behaviour in alcohol consumption by geographic area and gender. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of Daily Life

The smoking habit was highest among 20-24-year-olds and reached its highest level among 25-44 year-olds (in this age group it involved about one in four people). The proportion of smokers decreased slightly in subsequent age groups, but remained fairly stable up to the 60-64 age group and decreased in subsequent age groups.

Risky alcohol consumption decreased, but the frequency of binge drinking increased

In 2021, risky drinking affected 14.7% of the population aged 14 and over. After a significant increase between 2019 and 2020 (from 15.8% to 16.7%), a significant decrease in the share of risky drinkers of 2 percentage points was observed in 2021 (Figure 12). The decline in the proportion of at-risk consumers affected both habitual binge drinking (back to 2019 levels) and drunkenness, with a more significant reduction in the latter from 8.4 % to 7.1 % in 2021. The decrease in binge drinking habits mainly affected young people among whom this risky drinking behaviour is generally more widespread (in the 18-24 age group, drunkenness decreased by 3.6 percentage points). This trend may also have been affected by the closure of discos and dance venues during the pandemic period, which are often mentioned by young people as the place where their last binge drinking episode occurred (in 2019, more than one in three 18 to 24-year-olds reported it, while in 2021 it affected one in ten).

However, it should be noted that while the number of people reporting at least one binge drinking episode in the last year decreased in 2021, the average number of times a binge drinking episode occurred increased from 6.5 to 7 in 2020.

Riskier drinking habits are confirmed to be more widespread in the northern regions (16.9%), compared to the Centre (15.5 %) and especially in the South and Islands (11.2%). A significant decrease was observed in the regions of the North and the South and Islands (-2.5 percentage points) compared with 2020, while in the regions of Central Italy the situation remained completely stable.

The gender gap remained high also in 2021, with a higher share of men with risky drinking habits (20.5% men vs. 9.2% women); over time, however, the gender gap has narrowed and women's risky behaviour is slowly catching up with men's (in 2010 the gap between men and women was 17.6 percentage points vs. 11.3 in 2021).

Although significantly decreasing compared to 2020, high proportions of at-risk consumers were again observed in 2021 among 14-17-year-olds (23.6%) and 18-24-year-olds (15.9%).

Another age group in which at-risk consumption is high is that of people aged 65 and over, which stands at 18.6%. Unlike for young people, among those aged 65 and over, no decrease in risk consumption was observed in 2021, which was fully in line with the 2020 value (18.8%). It should be noted that the risky consumption behaviour characterising the young and the elderly was clearly different: the former's behaviour was more related to excessive consumption, especially at weekends, while the latter's was of an unmoderated daily nature.

Indicators

1. **Life expectancy at birth:** Life expectancy expresses the average number of years that a child born in a given calendar year can expect to live if exposed during his whole life to the risks of death observed in the same year at different ages.
   Source: Istat - Life tables of Italian population.
2. **Healthy life expectancy at birth:** It expresses the average number of years that a child born in a given calendar year can expect to live in good health on the assumption that the risks of death and perceived health conditions remain constant. It is built using the prevalence of individuals who respond positively ("good" or "very good") to the question on perceived health.
   Source: Istat - Life tables of Italian population and Survey on Aspects of daily life
3. **Mental health index (SF36):** The mental health index is a measure of psychological distress obtained from the synthesis of the scores obtained by each individual of 14 years and over to 5 questions from the SF36 questionnaire (36-Item Short Form Survey). It includes one or more items from each of the four major mental health dimensions (anxiety, depression, loss of behavioural or emotional control, and psychological well-being). The final score is a standardised measure, which varies between 0 and 100, with better psychological well-being corresponding to higher scores.
   Source: Istat - Survey on Aspects of daily life
4. **Avoidable mortality (age 0-74):** Deaths of persons aged 0-74, due to causes identified as treatable (in the light of medical knowledge and technology at the time of death, most deaths from that cause could be avoided through optimal quality health care) or preventable (in the light of understanding of the determinants of health at the time of death, most deaths from that cause could be avoided by public health interventions in the broadest sense). The definition of the lists of treatable and preventable causes of mortality is based on a joint OECD/Eurostat work, revised in November 2019. Standardized rates with European 2013 population aged 0-74, per 10,000 residents.
   Source: Istat - Vital register on deaths and causes of death
5. **Infant mortality rate:** Deaths during the first year of life per 10,000 born alive.
   Source: Istat - For deaths: Vital register on deaths and causes of death. For live births: Migration and calculation of yearly resident population
6. **Road accidents mortality rate (15-34 years old):** Mortality rate in road accidents by five year age groups for people aged 15-34 years, standardised by the European 2013 population of the same age groups.
   Source: Istat - For deaths: Survey on road accidents resulting in death or injury. For population: Survey on the municipal resident population by sex, year of birth and marital status
7. **Age-standardised cancer mortality rate (20-64 years old):** Mortality rate for cancer (initial cause) by five year age groups for people aged 20-64 years, standardised by the European 2013 population in the same age groups.
   Source: Istat - For deaths: Istat, Survey on deaths and causes of death. For population: Survey on the municipal resident population
8. **Age-standardised mortality rate for dementia and nervous system diseases (65 years and over):** Mortality rate for nervous system diseases and psychical and behavioral disorders (initial cause) by five year age groups for people aged 65 years and over, standardised by the European 2013 population in the same age groups.
   Source: Istat - For deaths: Istat, Vital register on deaths and causes of death. For population: Survey on the municipal resident population
9. **Multimorbidity and severe limitations (75 years and over):** Percentage of people aged 75 and over who declare to be affected by 3 or more chronic conditions and/or to be severely limited, for at least the past 6 months, because of a health problem in activities people usually do.
   Source: Istat - Survey on Aspects of daily life
10. **Life expectancy without activity limitations at 65 years of age:** It expresses the average number of years that a person aged 65 can expect to live without suffering limitations in activities due to health problems. It is based on the prevalence of individuals who answer to be limited, for at least the past 6 months, because of a health problem in activities people usually do.
    Source: Istat - Life tables of Italian population and Survey on Aspects of daily life
11. **Overweight or obesity (standardised rates):** The indicator refers to the Body Mass Index (BMI), which classifies people as overweight (25 <= BMI <30) or obese (BMI> 30) as classified by the World Health Organization (WHO). The indicator is standardised using the 2013 European standard population.
    Source: Istat - Survey on Aspects of daily life
12. **Smoking (standardised rates):** Proportion of people aged 14 and over who report current smoking. The indicator is standardised using the 2013 European standard population.
    Source: Istat - Survey on Aspects of daily life
13. **Alcohol consumption (standardised rates):** Proportion of people aged 14 and over who are at-risk consumers of alcohol. Taking into account the definitions adopted by the WHO and the recommendations from INRAN, in agreement with the National Institute of Health, are identified as "at-risk consumers" all those individuals who have at least one risk behaviour, exceeding the daily consumption of alcohol (according to specific thresholds for sex and age) or concentrating on a single occasion of consumption the intake of 6 or more units of any alcoholic drink (binge drinking). The indicator is standardised using the 2013 European standard population.
    Source: Istat - Survey on Aspects of daily life
14. **Sedentariness (standardised rates):** Proportion of people aged 14 and over referring not to play sports neither continuously nor intermittently during their spare time, and people aged 14 and over referring not to perform any physical activity, such as walking at least 2 km, cycling, swimming, etc. The indicator is standardised using the 2013 European standard population.
    Source: Istat - Survey on Aspects of daily life
15. **Adequate nutrition (standardised rates):** Percentage of people aged 3 years and over who say they take every day at least 4 portions of fruit and vegetables. The indicator is standardised using the 2013 European standard population.
    Source: Istat - Survey on Aspects of daily life

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Life expectancy at birth (a) 2021 (*)	Healthy life expectancy at birth (a) 2021 (*)	Mental health index (SF36) (b) 2021	Avoidable mortality (age 0-74) (c) 2019	Infant mortality rate (e) 2019	Road accidents mortality rate (15-34 years old) (f) 2020	Age-standardised cancer mortality rate (20-64 years old) (g) 2019
Piemonte	82.4	60.8	66.8	17.0	2.4	0.5	8.5
Valle d'Aosta/Vallée d'Aoste	82.2	63.2	66.6	16.5	2.4	-	7.9
Liguria	82.6	62.7	69.4	16.3	2.6	0.5	8.0
Lombardia	83.1	61.1	68.2	15.2	2.2	0.4	7.8
Trentino-Alto Adige/Südtirol	83.5	66.3	70.8	13.9	1.8	0.6	7.1
Bolzano/Bozen	*83.2*	*67.2*	*72.2*	*14.6*	*1.5*	*0.9*	*7.1*
Trento	*83.7*	*65.5*	*69.4*	*13.3*	*2.1*	*0.4*	*7.0*
Veneto	83.2	60.6	69.5	14.2	2.6	0.5	7.3
Friuli-Venezia Giulia	82.1	60.9	68.7	15.9	2.0	0.3	7.9
Emilia-Romagna	82.9	61.2	68.8	14.9	2.8	0.6	7.6
Toscana	83.1	62.6	68.5	15.2	1.5	0.5	7.9
Umbria	83.1	61.1	65.4	14.3	1.6	0.7	8.1
Marche	83.0	60.1	65.3	14.6	2.2	0.4	7.3
Lazio	82.6	61.4	68.3	17.4	2.4	0.4	8.3
Abruzzo	82.3	60.5	68.0	16.2	3.1	0.5	7.8
Molise	81.1	58.5	68.7	17.2	1.6	1.0	8.2
Campania	80.6	59.5	68.9	20.2	2.7	0.4	9.7
Puglia	81.8	59.5	68.0	16.2	2.2	0.6	8.2
Basilicata	82.0	57.0	67.5	16.5	3.5	0.6	7.4
Calabria	81.3	54.4	68.9	18.4	4.4	0.4	8.2
Sicilia	80.9	58.8	67.8	18.6	3.3	0.5	8.4
Sardegna	82.5	57.9	71.1	17.8	1.8	0.9	8.9
North	82.9	61.2	68.5	15.4	2.4	0.5	7.8
North-west	82.8	61.2	67.9	15.9	2.3	0.4	8.0
North-east	83.0	61.4	69.3	14.7	2.5	0.5	7.5
Centre	82.8	61.6	67.8	16.1	2.0	0.5	8.0
South and Islands	81.3	58.7	68.6	18.2	2.9	0.5	8.7
South	81.3	58.8	68.6	18.1	2.9	0.5	8.7
Islands	81.3	58.6	68.6	18.4	3.1	0.5	8.6
Italy	82.4	60.5	68.4	16.5	2.5	0.5	8.1

(a) Average number of years;
(b) Standardised mean values;
(c) Standardised rates per 10,000 residents;
(d) Per 100 persons aged 75 years and over;
(e) Standardised rates per 1,000 resident live births;
(f) Standardised rates per 10,000 residents aged 15-34;
(g) Standardised rates per 10,000 residents aged 20-64;

Age-standardised mortality rate for dementia and nervous system diseases (65 years and over) (h)	Multimorbidity and severe limitations (75 years and over) (d)	Life expectancy without activity limitations at 65 years of age (a)	Overweight or obesity (i)	Smoking (l)	Alcohol consumption (l)	Sedentariness (l)	Adequate nutrition (m)
2019	2021	2021 (*)	2021	2021	2021	2021	2021
36.2	43.2	10.1	39.3	21.3	17.8	29.0	23.7
50.8	42.3	9.9	41.0	19.9	20.6	18.2	19.7
34.5	42.7	10.9	38.4	18.3	15.1	22.7	18.0
37.3	46.7	10.9	40.2	18.8	16.0	21.9	18.8
36.0	40.3	10.5	40.1	17.8	19.9	13.6	19.9
38.4	*46.0*	*8.9*	*40.6*	*18.0*	*19.5*	*15.4*	*14.1*
34.0	*35.6*	*11.9*	*39.6*	*17.6*	*20.3*	*11.8*	*25.5*
39.2	43.0	10.4	44.6	15.8	17.1	22.2	18.0
29.9	43.0	10.1	42.8	18.2	20.0	22.1	21.3
34.6	42.6	9.8	41.6	18.5	16.8	24.4	21.5
32.9	43.7	10.1	41.9	23.1	16.9	25.0	19.3
32.8	53.8	9.2	43.8	21.0	17.8	30.0	21.2
36.7	52.4	10.8	42.9	21.6	17.6	28.2	20.2
30.3	42.6	9.5	43.1	21.6	13.9	31.5	18.7
35.3	50.5	9.5	46.4	19.5	15.0	31.1	14.8
25.7	48.7	10.2	51.0	19.1	20.1	44.1	15.2
27.8	55.0	8.4	53.9	21.0	10.3	52.6	13.4
31.6	49.8	8.3	49.5	17.9	10.5	45.8	11.4
29.6	54.3	8.5	54.6	19.0	13.5	48.5	9.5
25.3	63.5	8.6	50.1	17.0	12.3	49.0	14.3
31.7	59.8	8.0	49.0	19.1	8.9	51.0	13.2
40.8	51.9	9.3	41.3	20.5	16.5	30.0	18.0
36.4	44.1	10.4	41.1	18.5	16.9	23.2	20.0
36.7	45.1	10.7	39.7	19.4	16.4	23.9	20.0
36.0	42.6	10.1	42.9	17.3	17.6	22.4	19.9
32.4	45.2	9.8	42.7	22.0	15.5	29.0	19.2
31.1	55.2	8.5	50.0	19.3	11.2	47.2	13.5
29.5	53.9	8.6	51.4	19.2	11.4	47.9	13.0
34.2	57.8	8.3	47.1	19.5	10.8	45.7	14.4
34.0	**47.8**	**9.7**	**44.4**	**19.5**	**14.7**	**32.5**	**17.6**

(h) Standardised rates per 10,000 residents aged 65 and over;
(i) Standardised rates per 100 persons aged 18 and over;
(l) Standardised rates per 100 persons aged 14 and over;
(m) Standardised rates per 100 persons aged 3 and over.
(*) Provisional data.

2. Education and training[1]

Education, training and level of skills acquired influence people's well-being and open up pathways and opportunities that would otherwise be precluded. In Italy, the level of education and training that individuals manage to achieve is still largely correlated with social background, gender, socio-economic context and the geographic area in which one lives. Italy is far behind the European averages and the indicators of educational attainment and skill levels have suffered a setback in the last two years. The 2020 pandemic, with the consequent closure of schools and universities and the prevalence of distance and integrated education, have exacerbated the difficulties. The only exception was participation in lifelong learning by the population aged 25-64, which increased in 2021, not only catching up with the 2019 level but overcoming it.
In 2021, cultural activities taking place outside the home suffered a further sharp contraction after the one in 2020, with more significant reductions in attending theatre performances and going to a museum or exhibition. In-presence attendance of libraries also contracted significantly, but in 2021 the habit of online access compensated, at least partially, for the losses suffered in terms of users. In contrast, the indicator of reading books and/or newspapers remained stable.

Children attending nursery school in 2021 came to a standstill

Access to early childhood education services follows the geography of the availability of facilities on the Italian territory with strong deficits in the South and Islands, with the exception of Sardegna, and in small municipalities. In the 2019/2020 educational year, 13,834 early childhood services were active on the national territory[2] (about 500 more than the previous year) with a coverage of seats, compared to resident children up to 2 years of age, of 26.9%, still far from the 33% parameter set by the EU[3].
While the availability of facilities and seats continues to expand, albeit still by a small margin, participation in early childhood education has suffered a setback. The closure of school and education facilities during the COVID-19 pandemic also affected early childhood services in both the 2019/2020 and subsequent education years (Figure 1). This is reflected in the substantial stability of the percentage of children aged 0-2 attending nursery schools, 28%, calculated as a three-year average for the period 2019/2021[4]. Looking at individual years,

1 This chapter was edited by Barbara Baldazzi. Contributors were: Emanuela Bologna, Claudia Busetti, Raffaella Cascioli, Francesca Dota, Donatella Grassi, Giulia Milan, Miria Savioli, Azzurra Tivoli. Box "Education between lockdown and persistence of the pandemic" by Sante Orsini and Alessandra Tinto.

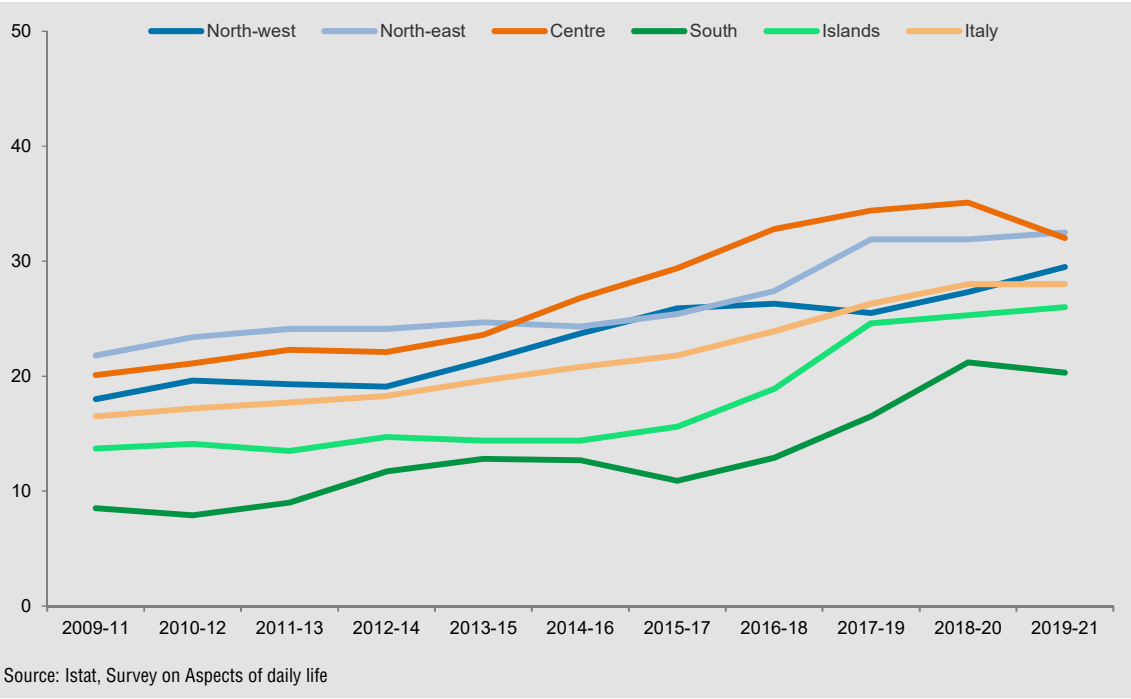
2 See Press Release "Nurseries and supplementary services for early childhood. Educational year 2019/2020", Istat, November 2021 https://www.istat.it/it/archivio/263120.

3 At the Lisbon European Council in 2000, the strengthening of services in pre-school age was identified as a priority. The strategy was subsequently broken down into two measurable objectives. For the age before compulsory schooling, between 3 and 5 years, the need was established to offer a seat to at least 90 per cent of children. For early childhood, under the age of 3, the target was set to offer at least 33 seats per 100 children.

4 The indicator on children aged 0-2 enrolled in nursery schools comes from the Sample Survey on Aspects of Daily Life and is constructed as a three-year average; due to the different methodology and the different reference period, the figure slightly exceeds the number of seats surveyed as of 31/12/2019 by the survey on nurseries and supplementary services for early childhood.

there was a decline in 2021 (26.1%, down from 29.2% in 2020) probably due to families' fear of the risk of contagion and the reshaping of family life. The highest inclusion is observed in the North-east regions (32.5% of children aged 0-2 enrolled in nursery schools) and the Centre (32%, down from 35.1% in the three-year average 2018-2020).

Figure 1. Children aged 0-2 years enrolled in nursery school by geographic area. Years 2009/11-2019/21. Percentages

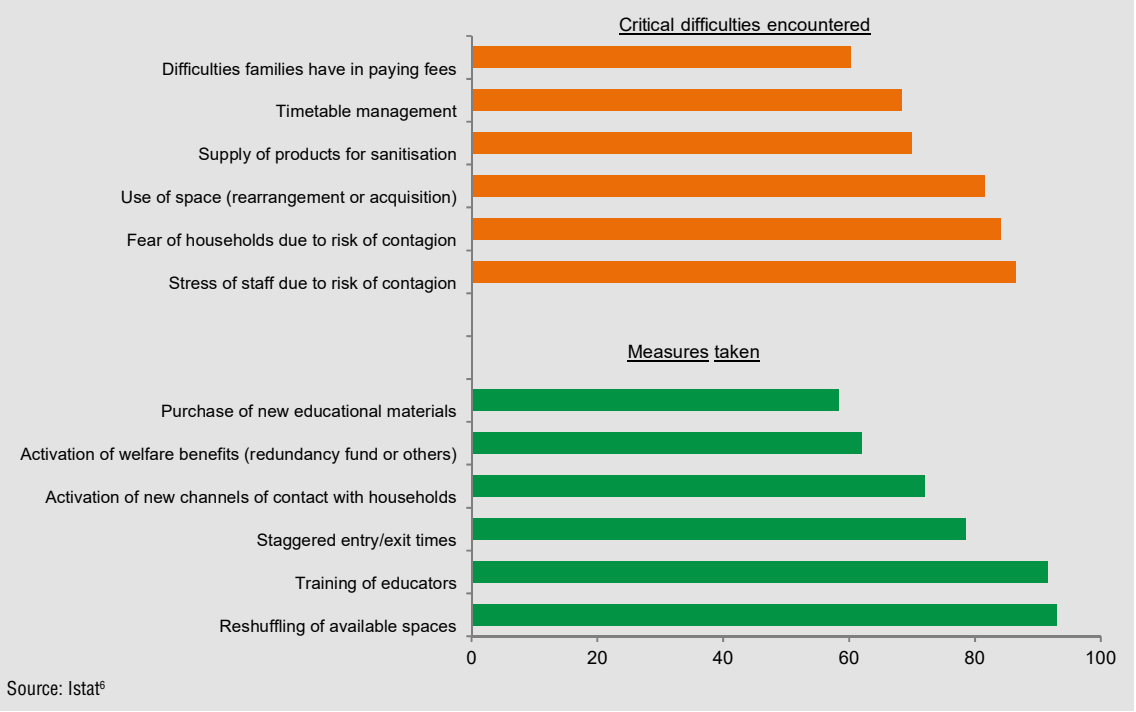


Source: Istat, Survey on Aspects of daily life

A survey conducted by Istat in April-May 2021[5] on a sample of public and private crèches and early nursery school sections reveals the many difficulties encountered by the managers of the services, both of an organisational nature for the use of spaces (encountered by 82% of the structures) and timetables (68%), for the supply of products for sanitisation (70%), and of an economic nature such as the difficulties families have in paying fees (60%) and the increase in management costs (Figure 2). In addition, in order to guarantee the reopening of the services in September 2020, many measures and organisational readjustments were adopted: reshuffling of available spaces (in 93% of the facilities), training of educators (92%), staggered entry and exit times (79%), activation of new channels of contact with families (72%), purchase of new educational materials (58%) and recruitment of new staff (51%).

5 The survey was promoted by the Department of Family Policies and carried out in collaboration between Istat and Ca' Foscari University - Venice.

Figure 2. Critical issues encountered and measures taken by public and private nurseries at the opening of the 2020/2021 education year.



Source: Istat[6]

Once they reach the age of 4-5, almost all children are, however, included in the educational pathways and even in the two years of the pandemic the share has remained stable: in the 2019/2020 educational year about 96% of children attended pre-school or the first year of primary school, a value that corresponds to the European target to be reached in 2020 (99.1% in the South, 98.4% in the Islands, 94.4% in the North and 94% in the Centre).

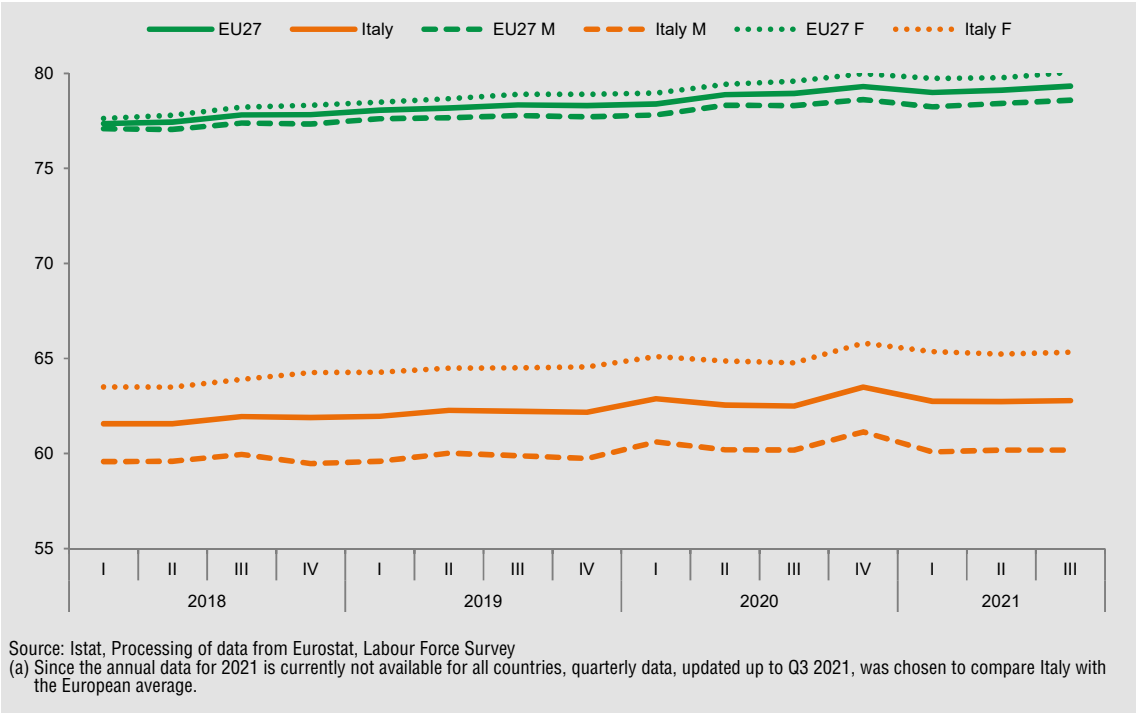
Growth of graduates in the adult population and of tertiary qualifications among young people has come to a standstill

In order to monitor the attainment of an adequate level of education, the two main indicators are the share of 25-64-year-olds with at least an upper secondary degree and the share of 30-34-year-olds with a tertiary degree[7]. Although these two indicators have been steadily growing, it is evident that Italy has not been able to catch up with most European Union countries; moreover, in the last year the share of high school graduates and, for the third year running, the share of tertiary degrees have come to a standstill.
In 2021, in Italy, 62.7% of people aged 25-64 had at least a high school diploma, more than 16 percentage points lower than the European average (Figure 3)[8]. Among women, 65.3% had at least a high school diploma in Italy, while the European share reached 80%.

6 See footnote 2.
7 Tertiary degrees include university, academic (Afam) and ITS higher technical diplomas. Post-graduate or post-AFAM degrees (levels 5-8 of the 2011 Isced international classification) are included.
8 Since the annual figure for 2021 is currently not available for all countries, Italy's 2021 figure was compared here with the European average based on the first three quarters of 2021.

Among men, on the other hand, the share of graduates in Italy was 60.1% while in the EU it reached 78.6%. In the first three quarters of 2021, the gap between Italy and Europe remained wider among men, and at the same time, a particularly significant gender gap was observed in Italy (5.2 percentage points difference compared with 1.5 percentage points for the EU average).
There was considerable heterogeneity throughout Italy, with values below 60% of the population having at least a high school diploma in Puglia, Sicilia, Campania, Sardegna and Calabria (51.7%, 52.4%, 53.4%, 54.2% and 55.7% respectively). Values above 70%, but still below the European average, were found in the Autonomous Province of Trento, Friuli-Venezia Giulia, Umbria and Lazio (respectively 70.4%, 70.6% and 71.3% for both Umbria and Lazio).

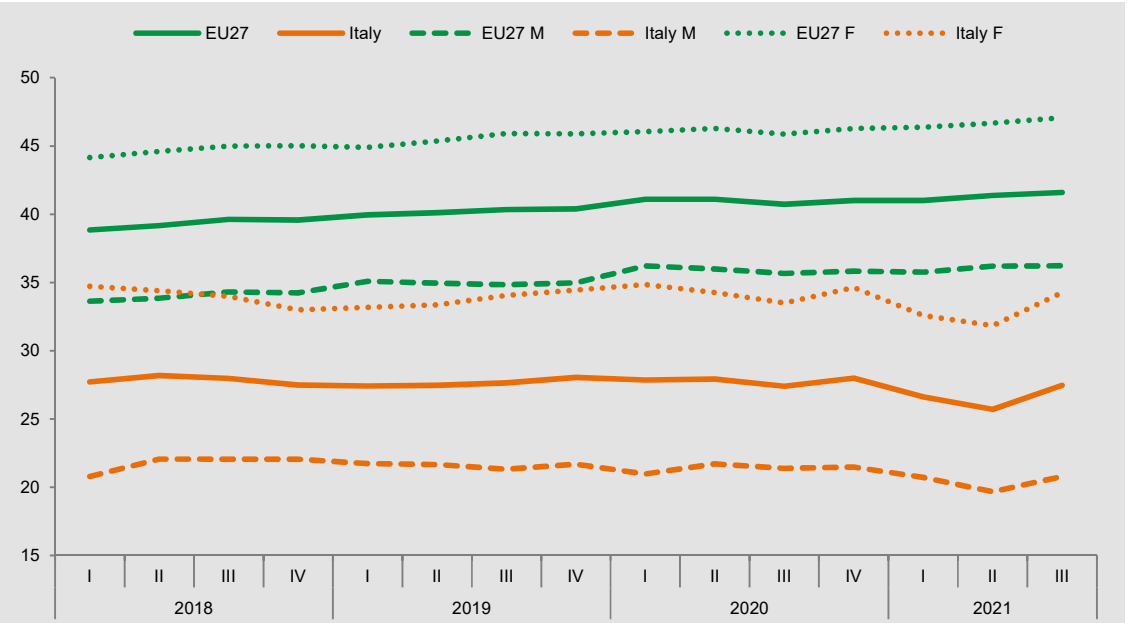
Figure 3. People aged 25-64 years having completed at least upper secondary education (ISCED level not below 3) in Italy and EU27. Quarterly data I 2018-III 2021 (a). Percentages



Source: Istat, Processing of data from Eurostat, Labour Force Survey
(a) Since the annual data for 2021 is currently not available for all countries, quarterly data, updated up to Q3 2021, was chosen to compare Italy with the European average.

Young people aged 30-34 who held a tertiary degree were 26.8% in Italy compared to more than 41% among their peers in the European Union countries. Moreover, in 2019, 2020 and 2021, in Italy the steady, albeit slow, increase in the share of tertiary graduates came to a halt (Figure 4); the gap with Europe increased again, especially among men. In Italy, the extensive gap between males and females, in favour of the latter, which begins as early as secondary school graduation, continues in further education. 57.7% of female students who graduated in 2019 went on to tertiary education compared to 45.1% of male students. The geography of the phenomenon for the Italian regions confirms the figure for graduates. Less than 20% of tertiary degrees were in Sicilia (17.8%) and Puglia (19.1%); above 30% were in Lazio (30.3%), Veneto (30.8%), Lombardia (31.3%), Molise (33.1%), Emilia-Romagna (33.6%), the Autonomous Province of Trento (33.7%) and Umbria (33.9%). Again, even the regions with the highest percentages did not reach the EU average.

Figure 4. People having completed tertiary education (30-34 years old) in Italy and in EU27 (a). Quarterly data I 2018-III 2021 (a). Percentages



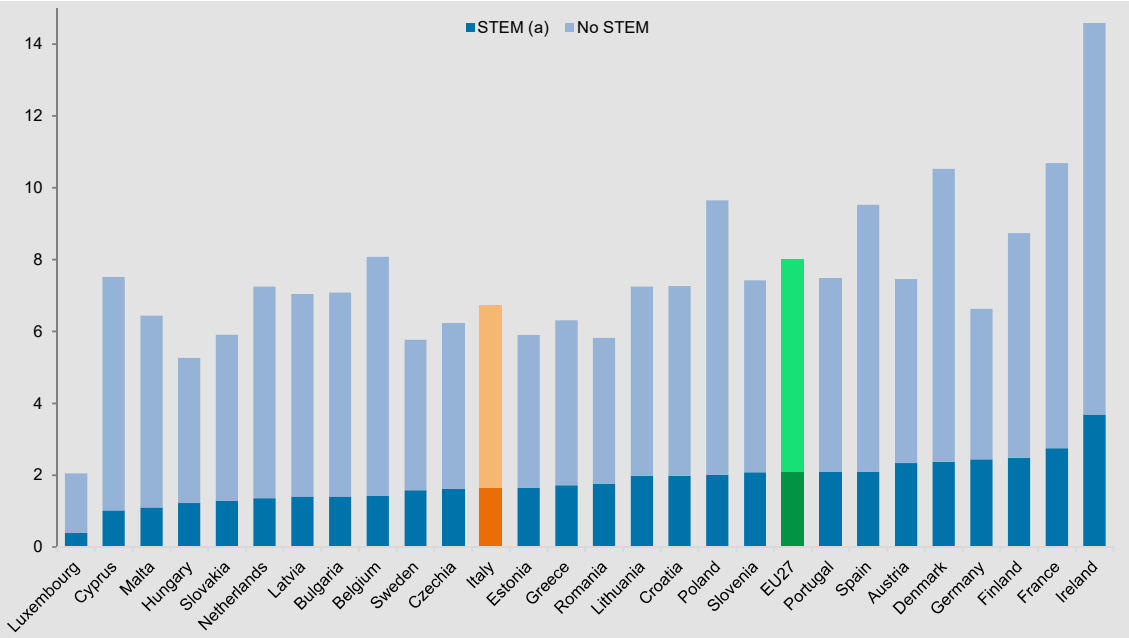
Source: Istat, Processing of data from Eurostat, Labour Force Survey
(a) Since the annual data for 2021 is currently not available for all countries, quarterly data, updated up to Q3 2021, was chosen to compare Italy with the European average.

More women hold a tertiary degree than men, but fewer graduate in scientific subjects

Approximately 4 million people in the 27 EU countries obtained a tertiary degree[9] in 2019. In order to compare data at an international level, this figure is conventionally related to the population aged 20-29. The indicator calculated in this way is about 8% on average in Europe, with considerable fluctuations between countries: from 14.6% in Ireland to 2.1% in Luxembourg.
In Italy, with 416 thousand individuals obtaining a tertiary degree in 2019, the value of the indicator stood at 6.7% (Figure 5) and was up compared to previous years (it was 5.7% in 2013).
In almost all EU countries, women were more likely to obtain a tertiary degree. On average, women made up 57% of the total, with the exceptions of Germany and Switzerland where the percentage was around 50%.
In Italy, women account for 57.4% of those who obtained a tertiary degree.
The female record, however, is lost when it comes to the scientific-technological disciplines, the so-called STEM disciplines (science, technology, engineering and mathematics)[10].
In times of rapid technological and digital innovation, skills in these disciplines assume particular relevance[11], one only has to think of the investments expected in the coming years on the dual ecological and digital transition. However, the increased employment opportunities in these areas have not, over time, implied a substantial increase in the number of individuals turning to STEM education and training.

9 Tertiary degrees include diplomas from Higher Technical Institutes, Level I and II degrees, PhD degrees, Masters and postgraduate specialisations (levels 5-8 of the 2011 Isced international classification).
10 Specifically, the STEM subject areas are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.
11 The Skills Agenda for Europe proposes in Action 7 to "Increase the number of graduates in STEM subjects and promote entrepreneurial and transversal skills".

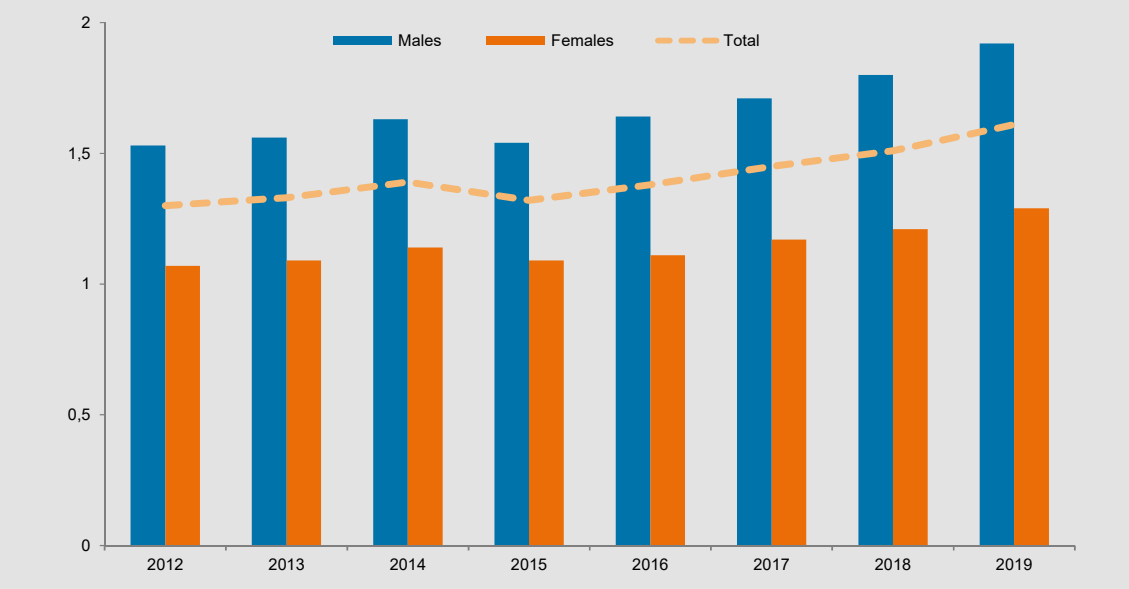
Figure 5. University graduates and other tertiary degrees by discipline of study in some European countries (a). Year 2019. Values per 1,000 inhabitants aged 20-29



Source: Istat, processing on Eurostat data
(a) The STEM disciplines are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.

At the European level, comparing the number of those who obtained a STEM tertiary qualification in the year to the total population aged 20-29, the indicator is in fact 2.1% (it was 1.9% in 2015) with double the value for males compared to females (2.8% versus 1.4%).

Figure 6. STEM graduates by gender in Italy (a). Years 2012-2019. Values per 1,000 inhabitants aged 20-29



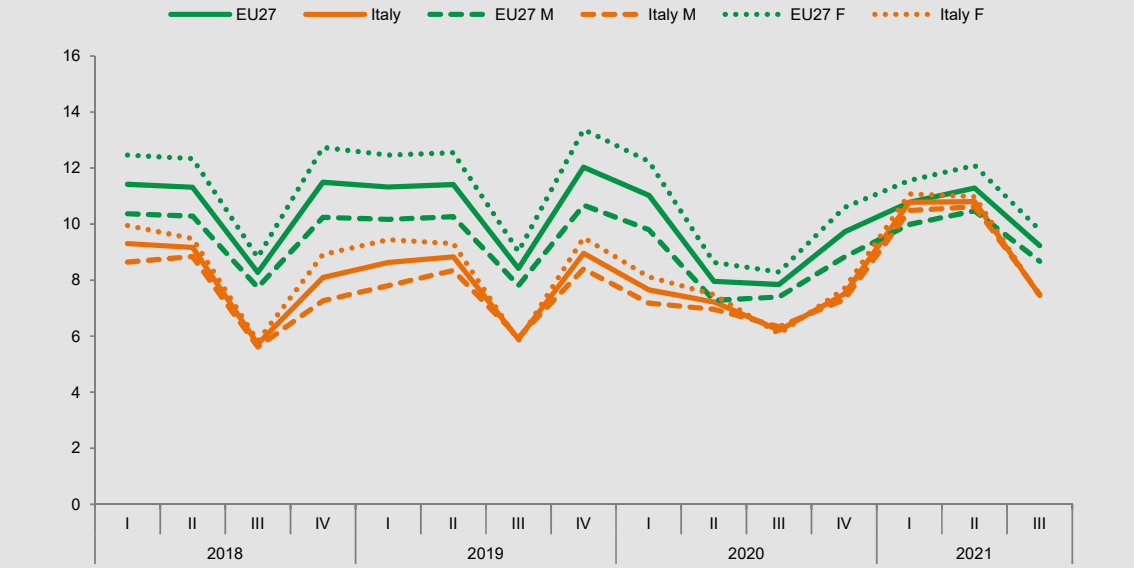
Source: Istat, processing on Eurostat data
(a) The STEM disciplines are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.

In Italy, the indicator was below the European average for males and for females (1.9% and 1.3% respectively), highlighting both the strong gender gap - which at the national level was, however, less wide than at the European level - and the general lack of adequately trained figures in these areas (Figure 6).

Participation in lifelong learning was on a strong upswing, matching European levels for the first time

Lifelong learning is useful to build and participate in a modern society. In Italy, lifelong learning, in the 4 weeks preceding the interview, concerned 9.9% of the population aged 25-64 in 2021, after the sharp drop in 2020 (7.1%, it was 8.1% in 2019). The quarterly trend fluctuated and depended on training opportunities, which were more frequent from September to May, and strongly influenced in the last 2 years by the pandemic crisis closures (Figure 7). In 2020, the opportunity to participate in learning activities was abruptly

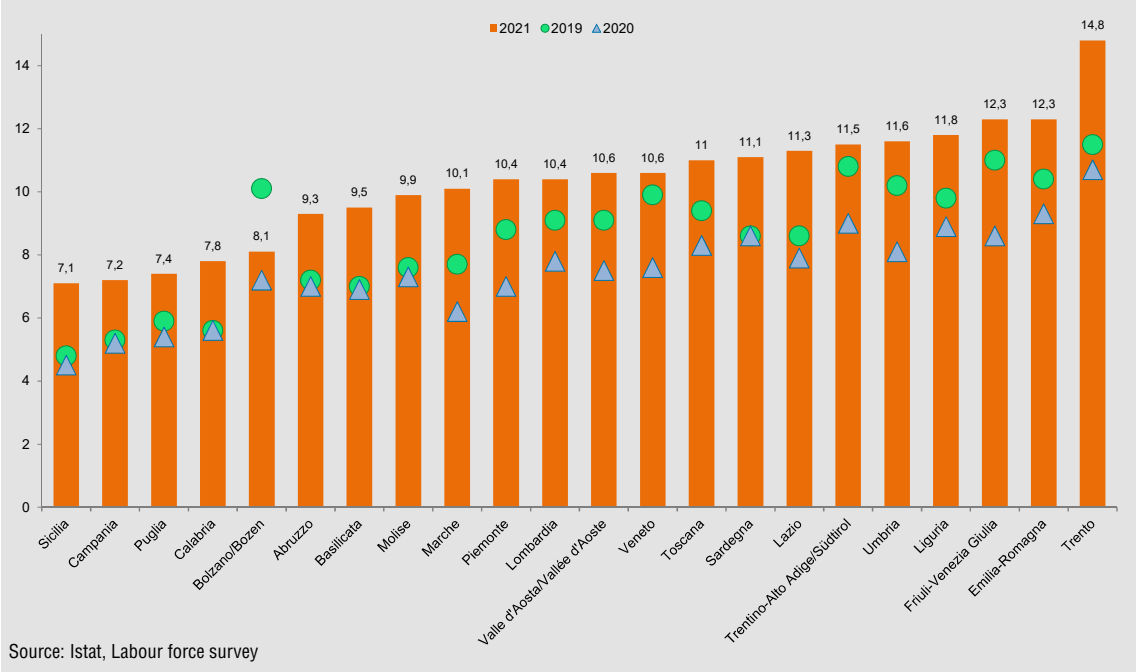
Figure 7. Participation in life-long learning in Italy and EU27. Quarterly data I 2018-III 2021. Percentages



Source: Istat, Processing of data from Eurostat, Labour Force Survey

discontinued in March, April and May, and partially switched to other forms. Already in 2021, people started to attend learning activities again, with even higher participation than in previous years, especially for the employed, reaching the participation levels of the average of the European Union countries for the first time in the first quarter 2021, also due to the different intensity of the pandemic in the other countries in 2021.
The recovery in participation in learning characterised all regions, and the share was also substantially higher than in 2019. Residents of Emilia-Romagna, Friuli-Venezia Giulia and the Autonomous Province of Trento participated more in training, with values above 12%; below 8%, on the other hand, Sicilia, Campania, Puglia and Calabria (Figure 8).

Figure 8. Participation in life-long learning by region. Years 2019, 2020 e 2021. Percentages



Source: Istat, Labour force survey

Students' skills deteriorate

In 2020 and 2021, the school path of students underwent one of the most radical and unexpected transformations, moving from totally face-to-face to distance learning and then proceeding with mixed learning in the school year 2020/21. Therefore, it became important to monitor students' learning levels and participation in lessons and school life.
If students' acquired competencies already appeared very compromised, the situation has worsened, despite the efforts of schools, teachers and families. In the school year 2020/21, boys and girls in the third grade of secondary lower school[12] who had failed to reach at least a sufficient level of skills (the *low performers*) were 39.2% for literacy skills (+4.8 percentage points compared to 2018 and 2019 - Figure 9) and 45.2% for numeracy skills (+5.1 percentage points compared to 2018 and +6.5 percentage points compared to 2019 - Figure 10). In some regions of the South and Islands the indicator showed highly critical situations with more than 50% of boys insufficient in literacy skills (in Campania, 54.1%; Calabria 59.2%; Sicilia 52.8% and Sardegna 56.9%) and more than 60% of girls insufficient in numeracy skills (in Campania 64.3%; Calabria 68% and Sicilia 63.3%).
Inequalities are also extensive by citizenship with 74.1% *low performers* in literacy skills among first-generation foreign students compared to 35.5% among students born in Italy with Italian parents.
The depletion of skills was even greater for students in the final year of secondary school,

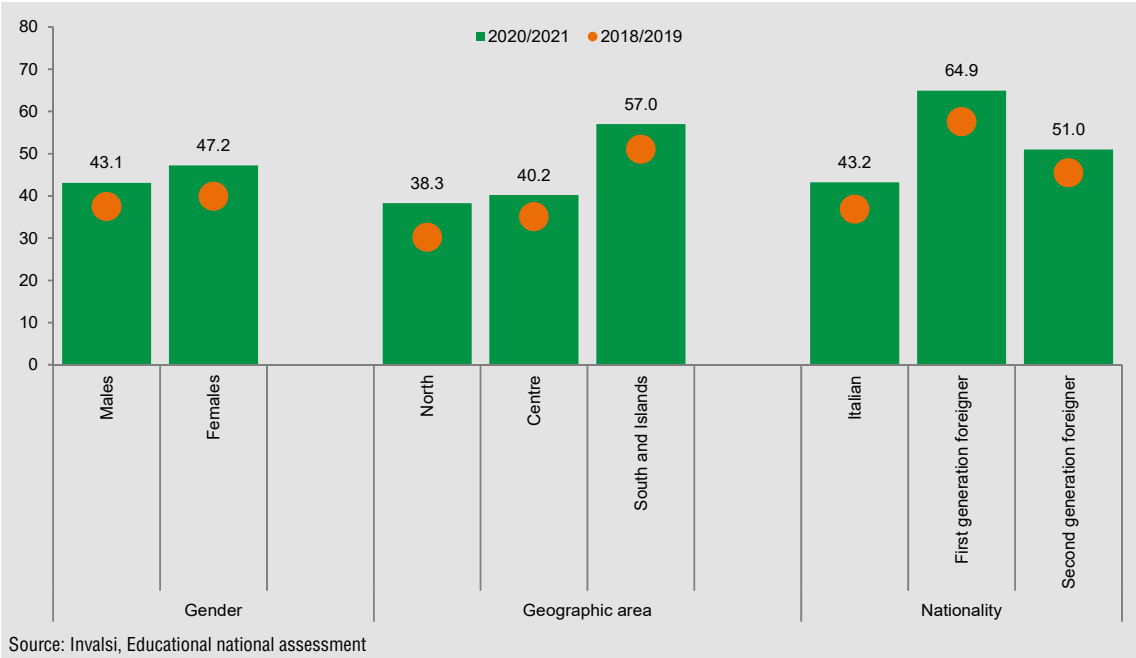
12 From this edition of the Bes Report, it was decided to replace the indicators on literacy and numeracy skills referring to students in the second grade of secondary school with indicators referring to the literacy and numeracy skills of students in the third grade of secondary school. This was motivated by the fact that while in the school year 2019/2020 the tests were not carried out for any school grade, in the school year 2020/2021 the tests were not carried out for the second grade of secondary school. In addition, the third grade of the secondary school is a key moment for the choice of the next study path and the performance obtained in this grade influences the future path as well as being a good predictor of the performance that will be obtained later.

Figure 9. Inadequate level of literacy (students in grade 8) by gender, geographic area, nationality. Scholastic year 2018/19 and 2020/21. Percentages

Source: Invalsi, Educational national assessment

who already had large shares of inadequate levels in 2019. In 2021, 44 out of every 100 students did not reach a sufficient level in literacy (+9.3 percentage points compared to 2019) and 51 out of every 100 students did not reach a sufficient level in numeracy (+9.2 percentage points compared to 2019).

Figure 10. Inadequate level of numeracy (students in grade 8) by gender, geographic area, nationality. Scholastic year 2018/19 and 2020/21. Percentages

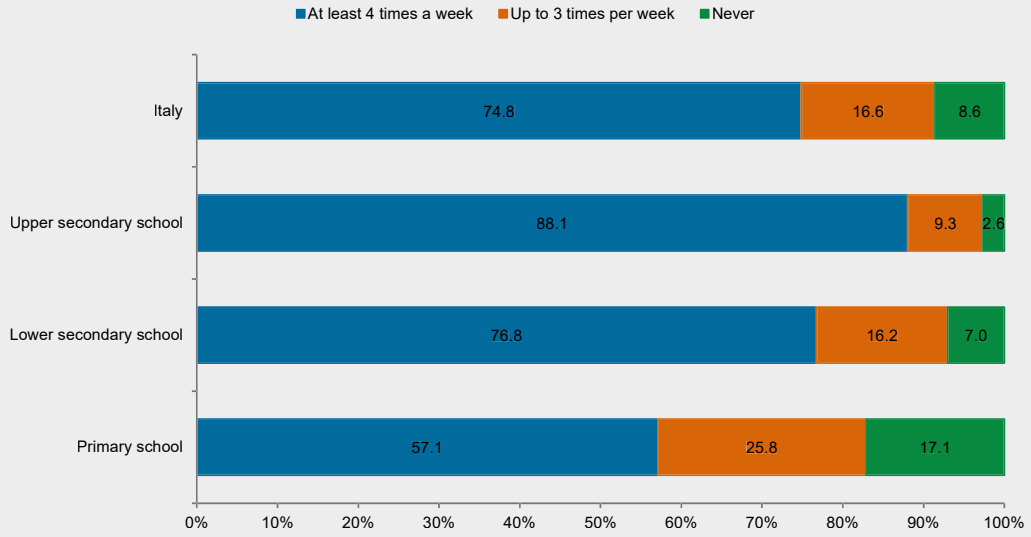


Source: Invalsi, Educational national assessment

EDUCATION BETWEEN LOCKDOWN AND PANDEMIC PERMANENCE

Following the declaration of a state of emergency for the COVID-19 pandemic, with the Prime Minister Decree of 4 March 2020, in-presence teaching activities in schools of all grades were suspended throughout the Country. For the entire duration of the suspension, which lasted until the end of the 2019/20 school year, school headmasters were called upon to activate distance teaching. In the period between March and June 2020, 91.4% of students aged 6-19 claimed to have done online lessons. A significant share of children remained excluded (8.6%), which rose to 10% in the northern regions and 10.6% in the Islands, especially in Sicilia (11.8%); the percentage was smaller in the Centre and the South, where students excluded were 6.7% and 6.9% respectively.
The situation appeared particularly critical for primary school children, 17.1% of whom never had online lessons with teachers in the March-June 2020 period. The proportion of secondary school pupils completely excluded from online lessons was lower: 7% in lower-secondary schools and only 2.6% in upper-secondary schools.
Even focusing on those who took lessons online, primary school pupils were the most penalised in terms of attendance of lessons. Among the youngest 57.1% attended lessons from home assiduously (four or more times a week), this percentage rose to 76.8% among those enrolled in lower-secondary school and to 88% among those enrolled in upper-secondary school (Figure A).

Figure A. Students by frequency of attending online lessons with teachers and school grade type. March-June 2020. Percentage values

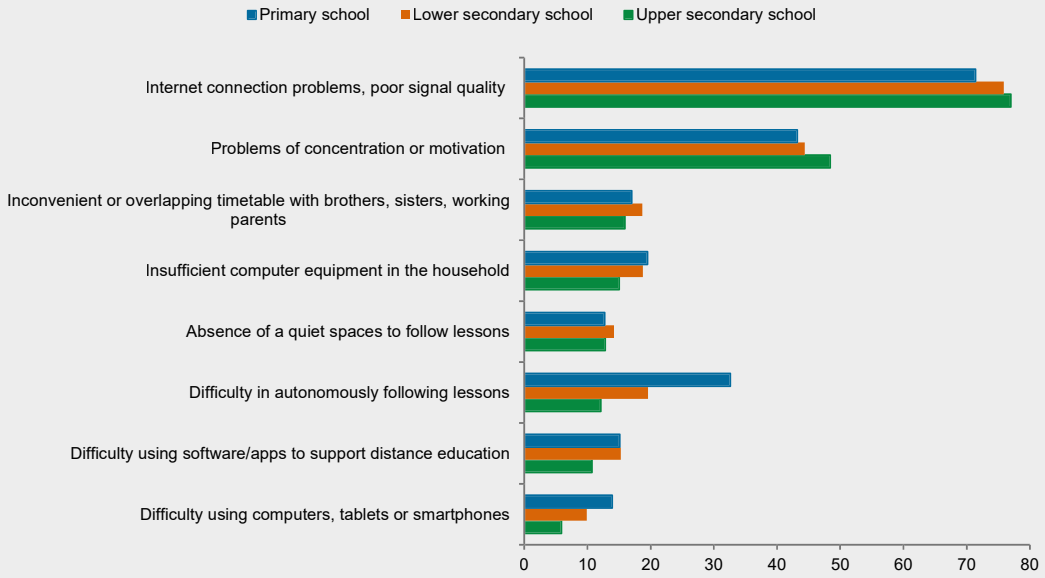


Source: Istat, Survey on Aspects of daily life

Students faced some obstacles in the use of online lessons. In fact, 65.8% of the students who attended online lessons report having had some difficulty, and the percentage rose to almost 70% in the North-west and tin he Centre, while it was lower in the North-east and equal to the average in the South and Islands.
The difficulties encountered were mainly related to the quality of the connection, which was reported as a problem by three-quarters of the pupils who took online lessons (Figure B), a share that reached almost 80% in the South and Islands. Another major issue was represented by problems of concentration and motivation, which affected 45.8% of those who had taken online lessons, increasingly from primary (43.2%) to upper-secondary school (48.4%). Difficulties in following the lessons autonomously were indicated by a fifth of the

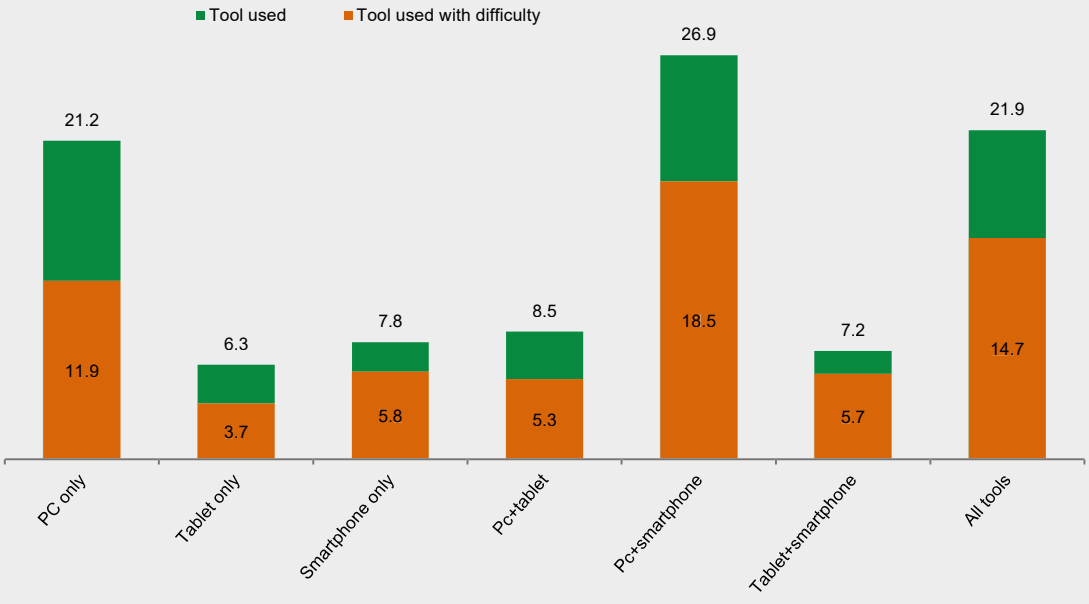
students, particularly if they were primary school students (32.6%). A slightly smaller share complained of insufficient family computer equipment (17.3%): this problem concerned 20.2% of the students who took online lessons in the South and 21.6% in the Islands. This was followed by problems related to inconvenient timetables or overlapping with other family members (16.9%), difficulties in using software or apps to follow lessons (13.2%), lack of suitable spaces (13.1%) and difficulties in using tools to connect to lessons, especially for primary school (13.9%).

Figure B. Students who have attended online lessons with teachers by school type and difficulties encountered. March-June 2020. Percentage values



Source: Istat, Survey on Aspects of daily life

Figure C. Students by tool used to connect to online lessons and difficulties encountered. March-June 2020. Percentage



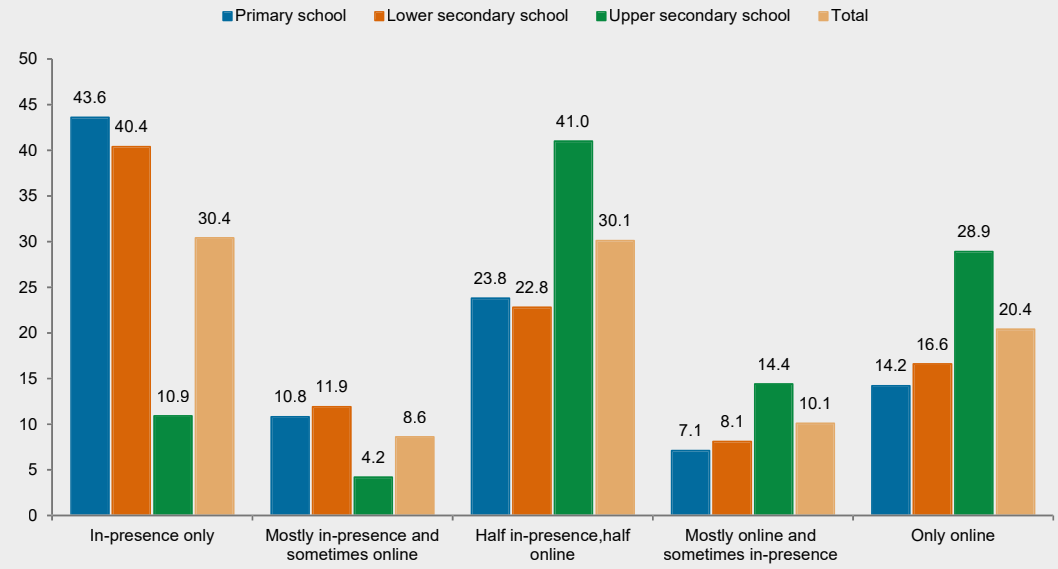
Source: Istat, Survey on Aspects of daily life

The situation became even more complicated in relation to the tool used to connect. Among those who were only able to use the most suitable tools (PC or tablet), amounting to 27.5% of those who followed online lessons, the share of those who declared difficulties was smaller, but still involved more than half of the users (Figure C). Those who used mobile phones certainly had more difficulties. When it was used as the only tool (this was 7.8% of the students) 3 out of 4 students said they had problems following online; but even when it was used in combination with other tools (56% of the students) over 70% had difficulties.

In the 2020/2021 school year, schools followed national and local guidelines, with periods of total, temporary or mixed closure. The return to school was therefore conditioned as much by the geography of the pandemic and regulations as by the logistical complexity of the school segment. Tracking the four weeks prior to the interview, 30.4% of the students returned to lessons entirely in presence or predominantly in presence (8.6%). However, 30.1% attended half in presence and half from home, and a substantial proportion attended lessons entirely or predominantly online (30.5% - Figure D).

The return to face-to-face teaching was more pronounced for primary and lower-secondary schools (more than 50% had completely or predominantly face-to-face lessons), while for upper-secondary students there was a greater persistence of the online mode. At a territorial level, the return in presence was greater in the Islands (54.7%) and in the Centre (46.6%), while in the other areas the online mode maintained a greater role. The difficulties encountered by students in distance learning diminished compared to the lockdown experience, but still affected 62.6% of students, and difficulties in connection (71.1%) and concentration/motivation (47.7%) continued to be the most frequently reported negative aspects.

Figure D. Students who attended lessons by school grade and mode of attendance. School year 2020/2021. Percentage values

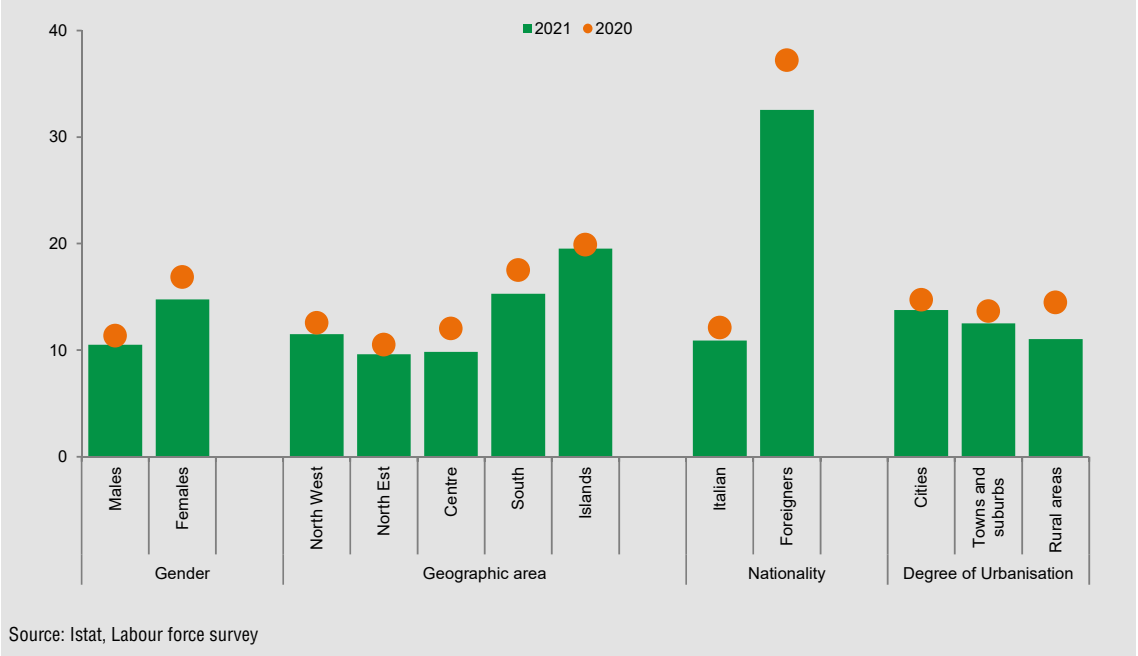


Source: Istat, Survey on Aspects of daily life

The share of young people leaving the education and training system early is still high and uneven across the territory

The difficulty for some young people to continue education and training starts early within the school system. Inadequate skills influence the decision to stay in or drop out of school. The share of young people who left the education and training system prematurely after obtaining only a lower secondary school qualification was still high, although declining.
In 2021, in Italy 12.7% of young people aged between 18 and 24 interrupted their education and training pathway early, a decrease compared to the previous year (14.2%). More boys (14.8%) than girls (10.5%) left school, and the decrease of *early leavers* compared to 2020 was most marked among boys, among whom the share dropped by 2 percentage points (Figure 11).
Leaving the education and training system is a phenomenon that concerns more frequently subgroups of young people who, come from more difficult socio-economic backgrounds. The share of early school leavers was higher in the Islands (19.5%, stable compared to 19.9% in 2020) and in the South (15.3%, down compared to 17.5% in 2020). In Sicilia, Puglia, Calabria and Campania the share was particularly high for males, among whom it exceeded 18% (24.8%, 19.6%, 18.6% and 18.4% respectively).

Figure 11. Early leavers from education and training by gender, geographic area, nationality and degree of urbanisation. Years 2021 and 2020. Percentages



Source: Istat, Labour force survey

The share of young people neither studying nor working dropped in 2021 but did not recover the pre-pandemic level

Widening the reference age group and also looking at the world of work, another group of young people was experiencing great difficulty in entering the active life of the country. In 2021, among 15-29-year-olds, 23.1% were not in education, employment or training down

from 23.7% in 2020, an increase of 1.6 percentage points compared to the year before the pandemic. Among women, 25% were neither in education nor employment (they were 25.8% in 2020), while among men they were 21.2%, they were 21.8% in 2020; however, among both women and men, the decrease does not compensate for the increase in NEETs observed in the first year of the pandemic. Regional differences remained high and followed the North-South dichotomy. The regions with the highest share of NEETs were Puglia (30.6%), Calabria (33.5%), Campania (34.1%) and Sicilia (36.3%).

Participation in cultural activities taking place outside the home collapsed in 2021

From 2020 onwards, the restrictions on access to cultural venues, which were imposed in order to curb the spread of *COVID-19*, significantly affected the enjoyment of most cultural participation activities taking place outside the home. If already between 2019 and 2020 the indicator monitoring participation outside the home in the 12 months before the interview had suffered a major decrease from 35.1% to 29.8%, thus losing more than 5 percentage points in a single year; between 2020 and 2021 there was a real collapse in cultural participation outside the home, which reached 8.3% (less than a quarter of what was observed in 2019 - Figure 12).

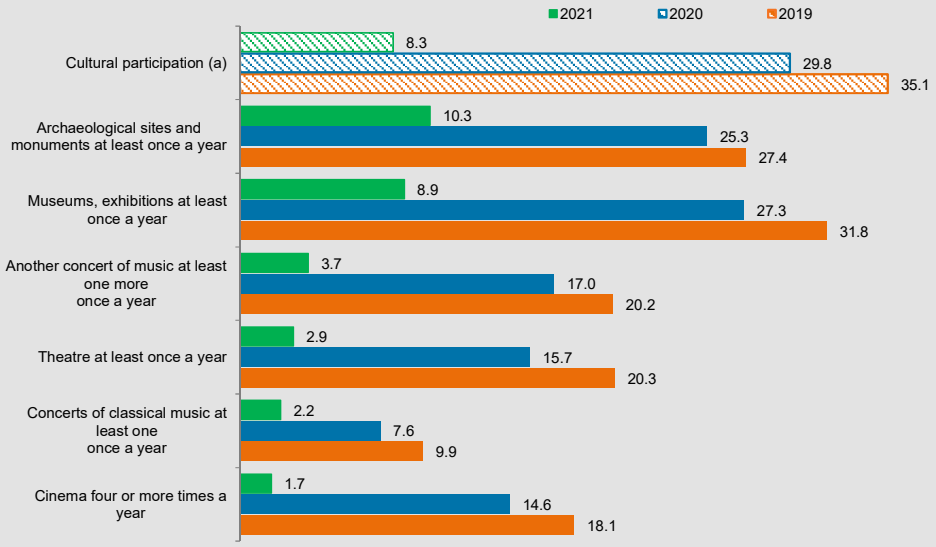
Between 2019 and 2020, the most pronounced reductions concerned the enjoyment of theatre performances and going to a museum or exhibition (which lost about 4.5 percentage points). In 2021, the enjoyment of museums/exhibitions and archaeological sites and monuments, although they concerned a higher percentage of people than the other forms of cultural participation considered (8.9% and 10.3% respectively), were the activities that decreased the most (-18.4 percentage points the former and -15.4 percentage points the latter).

Cultural participation outside the home declined by a wide margin for both men and women, but more sharply for the latter (-22.5 percentage points compared to 2020, -20.5 among men). Therefore, women, after having been characterised since 2017 by higher levels of cultural participation outside the home than men, in 2021 realigned themselves with men (women 8.1%; men 8.5%), thus losing their previously acquired advantage.

The distribution of cultural participation outside the home by age group shows a curve that gradually flattens out between 2020 and 2021 at the younger ages, which are known to have higher levels of cultural participation, but which in the pandemic years have experienced the greatest reductions, moving closer and closer to the other age groups.

In 2020 and 2021, the decrease in cultural participation outside the home was found to be across the whole country, however, in both years higher levels of participation were confirmed in the regions of the Centre-north than in the South and Islands.

Figure 12. Persons aged 6 years and older who engaged in 2 or more cultural activities outside the home in the 12 months before the interview. Years 2019, 2020 and 2021. Percentages

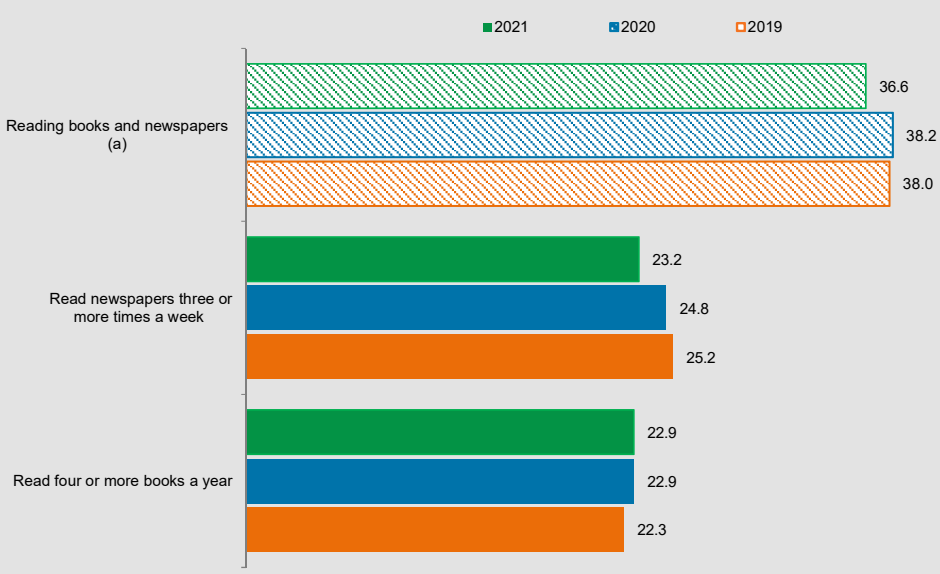


Source: Istat, Survey on Aspects of daily life
(a) Carried out two or more of the activities.

In 2021, newspaper reading decreased slightly, book reading remained stable

More stability can be observed, on the other hand, when analysing the indicator monitoring the reading of books and/or newspapers. Unlike cultural enjoyment outside the home, in 2020, thanks to more time spent inside the home, there was an upturn in the reading of at least one book in the year, which had increased for the first time in the last five years (from

Figure 13. Persons aged 6 and older who read at least 4 books in the year and/or at least 3 newspapers per week (print or online). Years 2019, 2020 and 2021. Percentage values



Source: Istat, Survey on Aspects of daily life

40.0% in 2019 to 41.4% in 2020); the reading of 4 or more books between 2019 and 2020 had also tended to pick up slightly (from 22.3% to 22.9%), while the reading of newspapers had remained stable at around 25%, maintaining the overall indicator at 2019 levels (around 38% - Figure 13).
In 2021, on the other hand, while book reading remained completely in line with 2020 (standing at exactly 22.9% as in 2020), newspaper reading decreased (from 24.8% to 23.2%), bringing the overall reading indicator down (36.6%).
The gender analysis shows a reduction in the habit of reading books and/or newspapers among men, who fall from 39.0% to 35.7% between 2019 and 2021 and lose a total of 8.5% of readers (around 3% between 2019 and 2020 and a higher share of 5.4% between 2020 and 2021). For women, on the other hand, after there had been a significant increase in the reading of books and/or newspapers between 2019 and 2020 and which had brought the share of female readers to 38.6% (it was 37.1% in 2019), there was a decrease between 2020 and 2021 and female readers approached the levels of 2019 (37.4%). The described trends, however, keep gender differences unchanged, with higher levels of book and/or newspaper reading among women who, as of 2020 for the first time, exceed men.
Between 2019 and 2021, reading books and/or newspapers remained more frequent among adults aged 45-74, with around 4 in 10 individuals in this age group engaging in this activity. However, whereas between 2019 and 2020 an increase in readers was observed among adults aged 55-64 and substantial stability among young people up to the age of 24 and among people aged 65 and over, between 2020 and 2021 decreases were observed in all age groups, with the only exception of young people aged 25-34, who increased by about 1.5 percentage points in their share of readers.
From a territorial point of view, a strong North-South gradient was observed in both 2020 and 2021, with shares of readers being higher in the northern and central regions and lower in the southern regions and in the Islands. Whereas in the northern regions, after the slight increase between 2019 and 2020, which saw the share of readers rise from 45.7% to 46.7%, there was a significant decrease between 2020 and 2021 (in 2021 the share of readers stood at 43.5%), in the regions of Central Italy, after the slight decrease recorded between 2019 and 2020 (bringing the no readers from 40.6% to 39.1%), substantial stability was observed in 2021 and finally, in Southern Italy and Islands, reading levels remained stable throughout the period (around 26%).

Decline in the habit of going to the library in 2020 and 2021

In 2020 and 2021, the situation brought about by the pandemic certainly had an impact on the share of library users aged 3 and over, which between 2019 and 2020 decreased by about 3 percentage points (from 15.3% to 12.2%) and between 2020 and 2021 almost halved to 7.4%.
In both 2020 and 2021, the decreases were observed across the board among users in all areas of the country and mainly affected the young and very young aged 6-24, being much smaller in the other age groups. The closure of schools and universities, especially in the early periods of the pandemic, certainly produced changes in the study habits of children and young people, who, despite the reductions recorded, also had the highest percentages of frequent users in 2020 and 2021 (28.8% in 2020 and 14.3% in 2021, re-

spectively). Already from the age of 25, on the other hand, library attendance decreased significantly to its lowest level after the age of 54.
The prevalence of women library users was higher: 14.1% versus 10.6% among men in 2020 and 8.2% versus 6.5% in 2021, with larger gender differences in both years among 11-24-year-olds.
Although to a much lesser extent than in the pre-pandemic period, in the two-year period 2020-2021 it was people from the North who attended libraries the most (17.5% in 2020 and 10.6% in 2021 respectively) followed by those from the Centre (10.3% in 2020 and 6.2% in 2021), while the lowest percentages were found in the South and Islands (6.7% in 2020 and 3.8% in 2021).
It is noteworthy that, in the face of the reductions in physical library users recorded in the pandemic years, in 2021 the online access to libraries affected 6.7% of people aged 3 years and over, bringing overall access to libraries ("real" or "virtual") to 11.6% and thus compensating, albeit partially, for the losses suffered in terms of users who physically went to the library.

Indicators

1. **Children aged 0-2 years enrolled in nursery school:** Pupils aged 0-2 years enrolled in early childcare services (per 100 children aged 0-2 years).
   Source: Istat, Survey on Aspects of daily life.
2. **Participation in the school system of children aged 4-5:** Percentage of children aged 4-5 years participating in pre-primary education or in primary education on total children aged 4-5 years.
   Source: Istat, Processing of data from Ministry of Education.
3. **People with at least upper secondary education level (25-64 years old):** Percentage of people aged 25-64 years having completed at least upper secondary education (ISCED level not below 3) on total people aged 25-64 years.
   Source: Istat, Labour force survey.
4. **People having completed tertiary education (30-34 years old):** Percentage of people aged 30-34 years having completed tertiary education (ISCED 5, 6, 7 or 8) on total people aged 30-34 years.
   Source: Istat, Labour force survey.
5. **First-time entry rate to university by cohort of upper secondary graduates:** Proportion of new-graduates from upper secondary education enrolled for the first time at university in the same year of upper secondary graduation (cohort-specific rate). Students enrolled in "Istituti Tecnici Superiori", "Istituti di Alta Formazione Artistica, Musicale e Coreutica", "Scuole superiori per Mediatori linguistici" and at foreign universities are excluded.
   Source: Ministry of Education; Ministry of University and Research.
6. **Early leavers from education and training:** Percentage of people aged 18-24 years who have achieved only lower secondary (ISCED 2) and are not included in a training program on total people aged 18-24 years.
   Source: Istat, Labour force survey.
7. **People not in education, employment, or training (NEET):** Percentage of people aged 15-29 years that are not in education, employment, or training on total people aged 15-29 years
   Source: Istat, Labour force survey.
8. **Participation in life-long learning:** Percentage of people aged 25-64 years participating in formal or non-formal education on total people aged 25-64 years.
   Source: Istat, Labour force survey.
9. **Inadequate level of literacy (students in grade 8):** Share of students in grade 8 (third year of lower secondary education) who do not reach an adequate level of proficiency in literacy competence (level 2 out of 5 levels).
   Source: Invalsi, Educational national assessment.
10. **Inadequate level of numeracy (students in grade 8):** Share of students in grade 8 (third year of lower secondary education) who do not reach an adequate level of proficiency in numerical competence (level 2 out of 5 levels).
    Source: Invalsi, Educational national assessment.
11. **People with high level of IT competencies:** Percentage of people aged 16-74 with advanced competences in all 4 groups identified in the "Digital competence framework".
    Source: Istat, Survey on Aspects of daily life.
12. **STEM graduates:** Graduates in tertiary education, in science, math., computing, engineering, manufacturing, construction per 100 residents aged 20-29. The numerator includes graduates with a Short-cycle tertiary education, Bachelor's or equivalent level, Master's or equivalent level, Doctoral or equivalent level (levels 5-8 of Isced 2011).
    Source: Istat, Processing of data from Ministry of University and Research.
13. **Cultural participation outside the home:** Percentage of people aged 6 years and over who have carried out 2 or more activities in the 12 months before the interview out of total people aged 6 years and over. The activities considered are 6: going to the cinema at least four times; at least once to: theatre; exhibitions and museums; archaeological sites, monuments; concerts of classical music, opera; concerts of other kind of music.
    Source: Istat, Survey on Aspects of daily life.
14. **Reading books and newspapers:** Percentage of people aged 6 and over who have read at least four books a year for reasons not strictly educational or professional (paper books, e-books, online books, audio books) and / or have read newspapers (paper and/ or online) at least three times per week out of total people aged 6 years and over.
    Source: Istat, Survey on Aspects of daily life.
15. **Use of libraries:**Percentage of people aged 3 and over who went to the library at least once in the past 12 months before interview out of total people aged 3 years and over.
    Source: Istat, Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Children aged 0-2 years enrolled in nursery school (a)	Participation in the school system of children aged 4-5 (b)	People with at least upper secondary education level (25-64 years old) (c)	People having completed tertiary education (30-34 years old) (d)	First-time entry rate to university by cohort of upper secondary graduates (e)	Early leavers from education and training (f)
	2019/2021	2019/2020	2021	2021	2019	2021
Piemonte	32.2	96.0	64.2	27.4	54.2	11.4
Valle d'Aosta/Vallée d'Aoste	35.1	95.4	62.0	27.7	50.0	14.1
Liguria	26.7	96.6	69.0	26.2	55.9	12.9
Lombardia	28.7	93.6	64.9	31.3	55.9	11.3
Trentino-Alto Adige/Südtirol	29.1	96.0	70.0	29.2	33.9	10.9
Bolzano/Bozen	*19.1*	*96.6*	*69.7*	*24.7*	13.0	*12.9*
Trento	*40.0*	*95.2*	*70.4*	*33.7*	*53.7*	*8.8*
Veneto	35.3	94.6	65.5	30.8	50.5	9.3
Friuli-Venezia Giulia	28.8	95.1	70.6	26.0	53.8	8.6
Emilia-Romagna	31.5	93.6	68.7	33.6	54.9	9.9
Toscana	37.3	96.0	65.3	29.0	52.9	11.1
Umbria	30.6	97.7	71.3	33.9	57.4	12.0
Marche	33.4	96.3	66.0	28.9	57.5	7.9
Lazio	29.1	91.7	71.3	30.3	55.2	9.2
Abruzzo	20.1	97.7	68.3	27.1	58.0	8.0
Molise	31.3	95.1	63.1	33.1	53.9	7.6
Campania	15.6	99.7	53.4	21.2	43.0	16.4
Puglia	29.6	99.0	51.7	19.1	50.2	17.6
Basilicata	15.3	98.8	63.3	24.7	54.6	8.7
Calabria	15.1	99.0	55.7	21.6	50.0	14.0
Sicilia	24.4	98.6	52.4	17.8	46.6	21.2
Sardegna	32.3	97.8	54.2	21.8	50.8	13.2
North	30.8	94.4	66.2	30.4	53.5	10.7
North-west	29.5	94.5	65.1	29.8	55.4	11.5
North-east	32.5	94.4	67.7	31.3	51.0	9.6
Centre	32.0	94.0	68.8	30.0	55.0	9.8
South and islands	22.2	98.9	54.5	20.7	47.5	16.6
South	20.3	99.1	55.2	21.6	47.5	15.3
Islands	26.0	98.4	52.8	18.7	47.5	19.5
Italy	**28.0**	**95.9**	**62.7**	**26.8**	**51.4**	**12.7**

(a) Per 100 children aged 0-2;
(b) Per 100 children aged 4-5;
(c) Per 100 persons aged 25-64;
(d) Per 100 persons aged 30-34;
(e) Specific cohort rate;
(f) Per 100 persons aged 18-24;

People not in education, employment, or training (NEET) (g)	Participation in life-long learning (c)	Inadequate level of literacy (students in grade 8) (h)	Inadequate level of numeracy (students in grade 8) (h)	People with high level of IT competencies (i)	STEM graduates (j)	Cultural participation outside the home (k)	Reading books and newspapers (k)	Use of libraries (l)
2021	2021	2020/2021	2020/2021	2019	2019	2021	2021	2021
19.2	10.4	30.4	39.5	23.6	1.50	9.6	42.1	7.6
18.0	10.6	25.4	34.8	28.3	1.21	10.3	47.5	15.2
19.6	11.8	47.1	49.9	22.0	1.67	7.5	43.7	6.5
18.4	10.4	36.8	40.2	26.6	1.50	9.3	43.8	12.1
15.4	11.5	....	....	25.7	0.85	10.7	55.5	23.2
13.3	*8.1*	*44.9*	*46.2*	*23.6*	*0.26*	*9.4*	*59.4*	*27.1*
17.6	*14.8*	*23.9*	*27.6*	*27.8*	*1.47*	*12.0*	*51.7*	*19.4*
13.9	10.6	31.1	33.1	23.8	1.61	9.0	40.2	9.2
16.2	12.3	28.5	30.5	25.8	1.61	10.9	49.4	9.3
15.1	12.3	35.7	38.5	25.0	1.68	9.8	42.9	10.1
17.9	11.0	41.7	41.0	23.8	1.40	9.9	41.5	8.9
19.2	11.6	29.5	37.2	22.3	1.66	8.1	35.8	5.0
16.0	10.1	29.0	36.1	21.5	1.77	7.2	34.8	6.4
21.6	11.3	35.2	41.3	23.9	1.80	12.3	39.7	4.6
21.1	9.3	36.7	40.5	21.5	1.89	5.6	32.1	3.6
27.7	9.9	35.3	40.9	18.9	1.97	4.1	27.8	2.8
34.1	7.2	49.0	61.1	16.6	1.58	5.8	22.3	2.5
30.6	7.4	42.7	50.0	18.0	1.57	5.0	24.6	3.4
25.2	9.5	44.5	52.1	17.8	1.79	4.3	22.6	4.2
33.5	7.8	53.6	63.6	16.7	1.59	3.6	22.7	4.6
36.3	7.1	48.7	60.7	14.4	1.27	5.5	23.9	3.8
23.6	11.1	48.7	53.3	23.0	1.40	7.0	45.0	8.6
17.0	10.9	34.5	38.3	25.0	1.53	9.4	43.5	10.6
18.7	10.5	....	....	25.3	1.51	9.2	43.3	10.4
14.7	11.5	....	....	24.6	1.56	9.7	43.6	10.8
19.6	11.1	35.9	40.2	23.5	1.67	10.6	39.4	6.2
32.2	7.8	47.1	57.0	17.2	1.52	5.4	25.7	3.8
31.5	7.7	....	....	17.6	1.62	5.2	24.1	3.2
33.6	8.1	....	....	16.6	1.30	5.9	29.2	5.0
23.1	**9.9**	**39.2**	**45.2**	**22.0**	**1.61**	**8.3**	**36.6**	**7.4**

(g) Per 100 persons aged 15-29
(h) Per 100 students attending grade III of secondary school;
(i) Per 100 persons aged 16-74;
(j) Per 100 inhabitants aged 20-29;
(k) Per 100 persons aged 6 and over;
(l) Per 100 persons aged 3 and over.

3. Work and life balance[1]

Employment in 2021 returned to grow steadily over the course of the year, after the severe slump recorded in 2020 due to the pandemic; the number of employed persons and the employment rate on average for the year, however, did not return to the levels of 2019 even though in the fourth quarter of 2021 the employment rate returned to exceed that of the same quarter in 2019.
Even after a global epidemic, high human capital continued to play a protective role in the labour market: the employment rate among university graduates in 2021 was back to pre-crisis values, particularly for women, and the employment rates of women with and without children became closer. Yet, while possessing a high degree ensures a greater and more continuous presence in the labour market, it does not always guarantee an adequate quality of employment: around one-third of employed graduates work in an occupation for which a lower degree would be sufficient.
The emergency has helped break down certain rigidities in work organisation, allowing a growing share of those employed to work from home in 2021. At the same time, it has changed the balance for reconciling work and family life, sometimes making the management of daily life problematic.
This may have changed the perception of one's working condition: in 2021 the share of involuntary part-time workers decreased, particularly among women in couples with children. However, this occurred in a context in which domestic work continues to be unbalanced for the female component: in 2021, the progressive improvement registered in recent years in the family work asymmetry indicator (share of household work time carried out by women in a couple on the total of the household work time) slowed down.
Job satisfaction continued to rise, despite the pandemic: in 2020 it was mainly the share of the very satisfied among permanent employees and skilled or white-collar occupations that rose, thanks in part to the possibilities offered by smart working; in 2021 also the share of the very satisfied among the self-employed rose again. The perception of job safety improved: the share of employed people who fear losing their job and not finding a similar one, which had risen sharply in 2020, returned to its 2019 level.

The 2021 employment recovery did not make up for the 2020 loss

The year 2021 marked a partial recovery in the employment lost in 2020 (+128 thousand employed among 20-64 year-olds on an annual average)[2], a synthesis of a still negative dynamic in

1 This chapter was edited by Silvia Montecolle and Maria Elena Pontecorvo, with contributions from: Danilo Birardi, Tania Cappadozzi and Alessia Sabbatini.

2 According to the new Regulation (EU) 2019/1700, in force since 1 January 2021, employed persons include persons between 15 and 89 years of age who in the reference week: 1) performed at least one hour of work for pay or profit, including unpaid family workers; 2) are temporarily absent from work because they are on holiday, on flexible hours (vertical part-time, time off in lieu, etc.), on sick leave, on compulsory maternity/paternity leave, in professional training paid for by the employer; 3) are on parental leave and receive and/or are entitled to income or work-related benefits, regardless of the duration of the absence; 4) are absent as seasonal workers but continue to regularly carry out tasks and duties necessary for the continuation of the business (these tasks and duties do not include the fulfilment of legal or administrative obligations); 5) are temporarily absent for other reasons and the expected duration of the absence is three months or less. The preceding conditions are independent of the signing of an

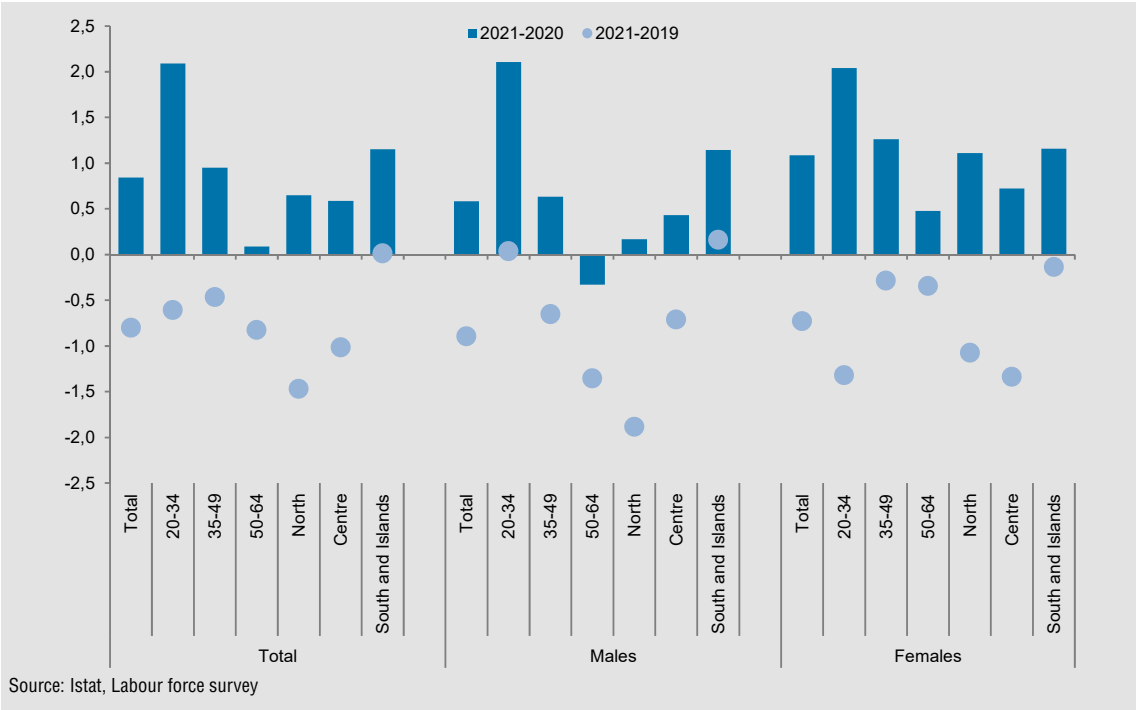
the first quarter that became positive and progressively more pronounced in the following three. The employment rate among people aged 20-64 rose to 62.7% (+0.8 percentage points compared to 2020), but it still remained -0.8 points lower than in 2019 (Figure 1). When looking at quarterly data, this distance increased from -2.2 percentage points in the first quarter to -0.1 in the third quarter and turned positive in the fourth quarter (+0.4 points compared to the fourth quarter of 2019).

The recovery in 2021 was more marked for women, who were also the most affected in 2020 by the effects of the pandemic on the labour market. Despite the fact that the female employment rate rose to 53.2%, an increase of +1.1 points over 2020 (the increase stopped at 0.6 points for men), the recovery over 2019 was similar for men and women (the rates were -0.9 and -0.7 points lower respectively). The gender gap, which had risen to 19.8 points in 2020, decreased again in 2021 while remaining very high (19.3 points). By contrast, the figure for the last quarter of 2021 showed a recovery for women (+1.0 point) compared to the corresponding quarter of 2019, which was not observed for men (-0.3 points), bringing the gap to 18.4 points in the fourth quarter of 2021.

Among young people (20-34-year-olds), the employment rate in 2020 dropped to 50.6% and the recovery in 2021 (+2.1 points), although more intense than in the other age groups, did not compensate for the drop. Instead, there was a recovery in the last two quarters of 2021 and, in particular, in the fourth quarter: the employment rate for the 20-34 age group was 1.3 points higher than in the fourth quarter of 2019.

In 2020, the territorial gaps narrowed: the effects of the pandemic on the labour market were stronger in the regions of the Centre-North than in those of the South and Islands. In 2021, this narrowing of the gap between the North and the South continued, and in the

Figure 1. Employment rate of the population aged 20-64 by gender, age group and geographic areas. Years 2019-2021. Variations in percentage points



Source: Istat, Labour force survey

employment contract and the employed estimated through the Labour Force sample survey therefore also include irregular forms of work.

South and Islands, the employment rate, which showed a more marked increase than in the other areas (+1.1 points compared to 0.6 in the Centre and the North), returned to the levels - albeit low - of 2019 (48.5%). In the North and the Centre, the indicator remained below the pre-pandemic level by -1.5 and -1 point respectively (standing at 71.4% and 67.2%). The comparison between the fourth quarter of 2021 and the fourth quarter of 2019 showed the employment rate in the North still not at 2019 levels (-0.4 points), while in the Centre and the South and Islands it more than recovered past levels (+0.6 and +0.9, respectively). The recovery was recorded for all levels of education and was strongest for university graduates who, between 2020 and 2021, saw their employment rate rise to 79.2% (+1.5 points in one year), a level that was two-tenths of a point higher than in 2019. The recovery for university graduates was concentrated among women; in fact, although the male rate fell less than the female rate in 2020, it has not yet returned to pre-crisis levels.
Foreign citizens have also been strongly affected by the effects of the pandemic on employment: the employment rate in 2020 fell below that of Italians and remained lower (by 1.5 points) even in 2021, even though among foreigners the recovery was stronger (+1.4 points compared to +0.8 for natives); the value stood at 61.4% and was 3 percentage points lower than in 2019. The situation of foreign women was particularly critical, with less than half of them employed in 2021.

Figure 2a. Non-participation rate of the population aged 15-74 by principal features. Year 2021. Percentages

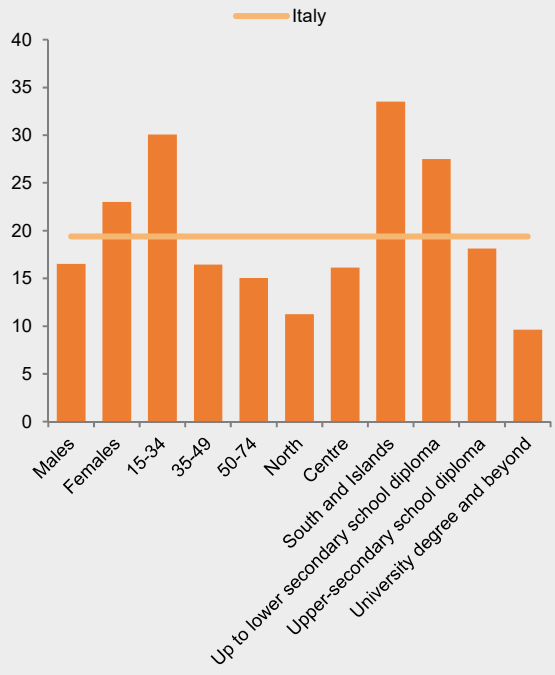
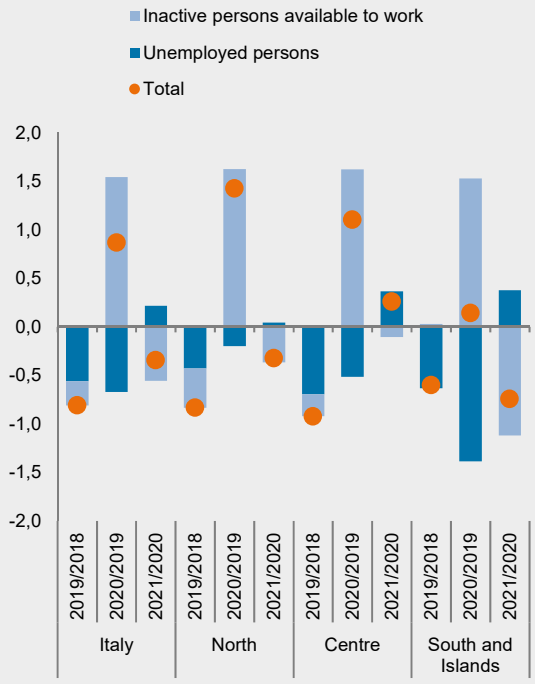


Figure 2b. Non-participation rate of the population aged 15-74 and its components. Years 2018-2020. Variations in percentage points



Source: Istat, Labour force survey

The labour market reactivates, declining the non-participation rate

The non-participation rate in 2021 dropped again (-0.3 percentage points) after the increase observed in 2020 (+0.8 points compared to 2019) that had interrupted the downward trend. However, the 2021 value of 19.4% (Figures 2a and 2b) remained above that of 2019.
However, it should be pointed out that this indicator - including in the numerator the unemployed and those who are available for work despite not having carried out active research activities - showed a peculiar dynamic in 2020, closely associated with the health emergency: the limitations linked to the lockdown period and the fear of contagion affected the possibility of undertaking active research activities and resulted in a decrease in the unemployed and an increase in the inactive interested in working (which also included individuals who had become unemployed and were unable, or discouraged, to look for another job). In previous economic downturns, on the contrary, there was a concomitant increase in the unemployed and those available for work who had not carried out active research; both contributed to the increase in the non-participation rate, understood as an unfulfilled job offer.
In 2021, the easing of the restrictive measures imposed by the government to counter the pandemic resulted in a decrease in the inactive, who partly returned to work thanks to the recovery of employment and partly became unemployed because they started actively looking for work again. The drop in the non-participation rate observed in 2021, a synthesis of the opposite dynamics of the two components - unemployed and inactive available for work - can therefore be interpreted as the reactivation of a labour force "suspended" during the health emergency.
The indicator decreased especially among young people up to the age of 34 (-1.7 points), university graduates (-1.1 points), residents in the South and Island (-0.7 points) and women (-0.6 points).
Among university graduates, whose non-participation rate was significantly lower than the average (9.6%), and those residing in southern regions, who on the contrary showed the highest value (33.5%), the rate fell below the 2019 level (by -0.3 and -0.6 percentage points respectively).

Fixed-term employment increased, especially with short-term contracts

The decline in employment in 2020 mainly involved short-term precarious work, both due to the non-renewal of expiring contracts and the non-activation of new employment relationships. As a result, among fixed term workers, the share of those with long-term contracts increased: in 2020, 18.4% of fixed-term employees and collaborators had been in the same condition for at least five years (+1.3 percentage points compared to 2019). The recovery in employment in 2021 concerned only fixed-term employees and collaborators, especially those with short-term contracts: although the number of precarious workers for at least five years returned to the levels of 2019 (553,000; +35,000 compared to 2020), their share in the total number of precarious workers fell to 17.5%. The number was nonetheless high considering that this is a persistent category of employees trapped in precarious employment. The phenomenon was more widespread in the South and Islands, where almost a quarter (23.8%) of temporary workers had been in temporary employment for at least five years (compared with 13.0% in the North and 16.7% in the Centre) and among

workers with no more than a secondary school diploma (24.0%, compared with 13.3% of high school graduates and 17.0% of university graduates). The different distribution by sector of activity was also evident: among those employed in agriculture, half of the precarious workers had been so for at least five years, and even in the public administration and the education sector the share exceeded 20%.
Another vulnerable category that characterises the Italian labour market is that of irregular workers. According to the most up-to-date estimates made within the framework of the National Accounts, in 2019 employed persons not in regular occupation in Italy accounted for 12.6% of total employment, with the highest incidence once again in the South and Islands (17.5%). These workers may have seen increased insecurity due to a high presence in sectors particularly affected by the crisis (tourism, accomodation and food services), and vulnerability also due to the difficulty of accessing social safety nets.

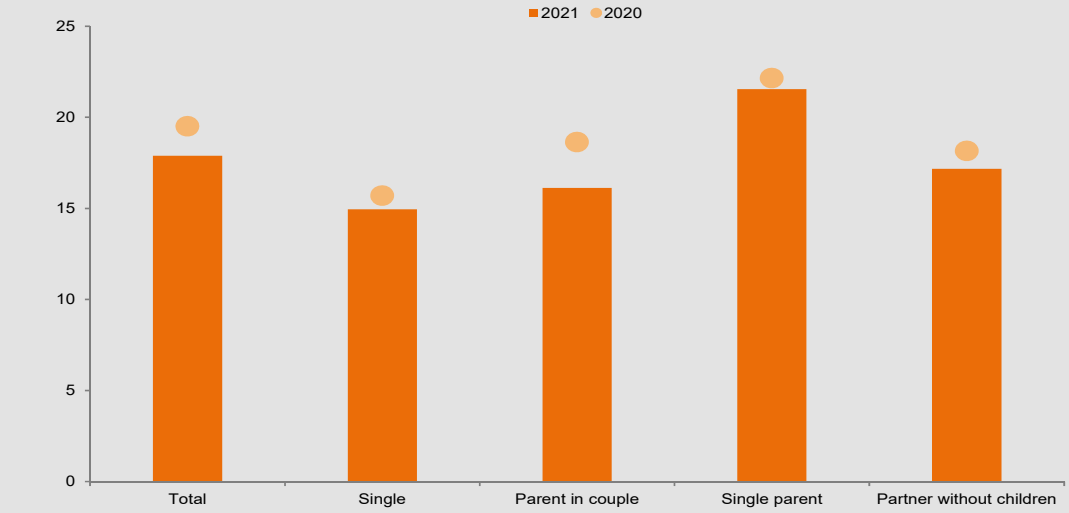
The underutilisation of the labour force increased

The quality of the labour market also depends on the ability to make the best use of available resources. The mismatch between the characteristics of the employed person, with particular reference to the qualification held, and those of the profession can lead to inefficient utilisation of the labour force. The share of employed persons holding a higher degree than that most commonly required for the profession slowly and steadily increased in 2019 and 2020. In 2021, more than a quarter (25.8%) of workers were overeducated (+0.7 percentage points higher than in 2020).
The phenomenon was more widespread among women (27.4% of female workers were overeducated), among younger age groups (39.5% among workers aged up to 34 years and 30.0% among those aged 35 to 44), among residents in the Centre (28.6%) and among foreigners (32.8%); women were also among those who recorded the most marked increases compared with 2020 (+0.9 points), together with employed persons aged 45-54 (+1.1 points) and residents in the Centre-North (+1.2 points in the Centre and +0.9 in the North).
The phenomenon was more evident among the employed with a tertiary qualification, where as many as one-third were overeducated (33.6%) and 35.6% among women (31.3% among men); compared with 2020, the share increased by 0.6 percentage points, especially for the male component (+1.2 points compared with +0.2 for the female component).

Involuntary part-time work decreased among women, especially those with children

Involuntary part-time work is a typical phenomenon of the Italian labour market and mainly involves female employment. In 2021 there was a slight decrease in the share of part-time employees not by choice, but because they could not find a full-time job. This was 11.3% of the employed, 0.5 points lower than in 2020; this decrease was mainly due to the female component (-1.6 points), which saw an increase in the share of female part-time workers by choice and to a much lesser extent that of full-time workers. The reduction in involuntary part-time work was greater by 2 percentage points among the youngest women (aged 15-34) and those living in the Centre (18.9%) and the North (15.1%), while it remained substantially stable among women in the South and Islands (23.4%).

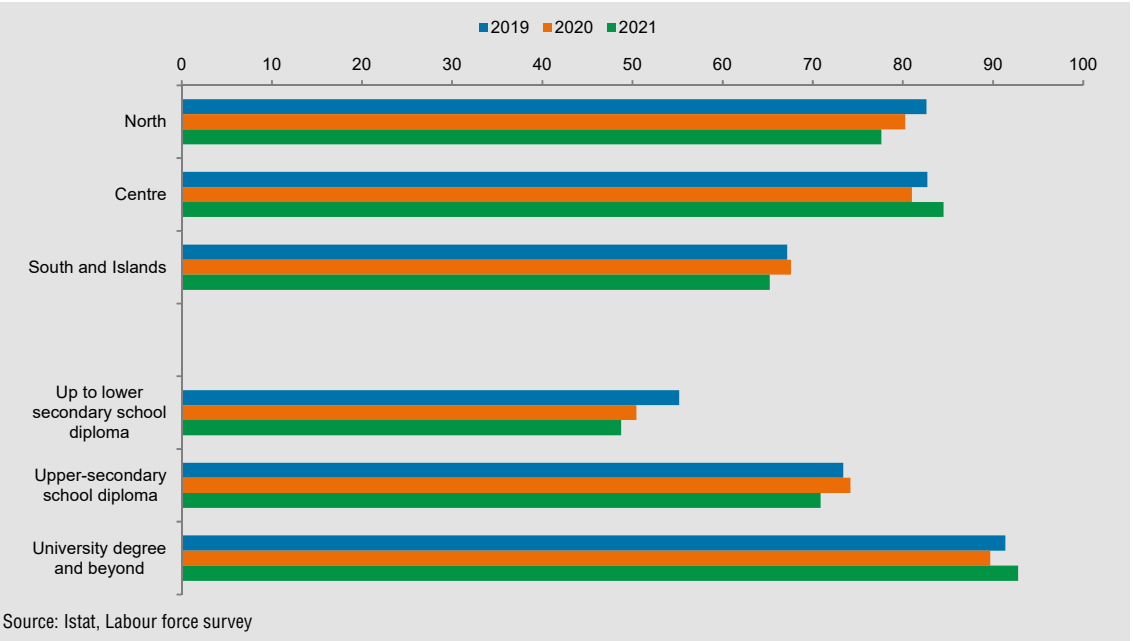
Figure 3. Women employed in involuntary part-time by role in household. Years 2020-2021. Percentages



Source: Istat, Labour force survey

The reduction in involuntary part-time work among women in couples with children (-2.5 points) was more than double that among single women (-0.7 points) or women in couples without children (-1.0 points), suggesting that the health emergency may have changed women's perception and management of time, especially if they have children; the problems generated by the pandemic in terms of reconciliation and childcare are well known.
Strong inequalities remain: the share of involuntary part-time workers continued to be much higher among women (17.9% compared to 6.5% of men), among young people up

Figure 4. Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children, by geographic area and educational qualification. Year 2021 (value per 100)



Source: Istat, Labour force survey

to 34 years of age (21.4% up to 24 years and 13.9% between 25 and 34 years), residents of the South and Islands (14.8%) and the Centre (12.4%), among those with low educational qualifications (14.2%) and among foreigners (19.6%).

More employed among women without children than among women with children

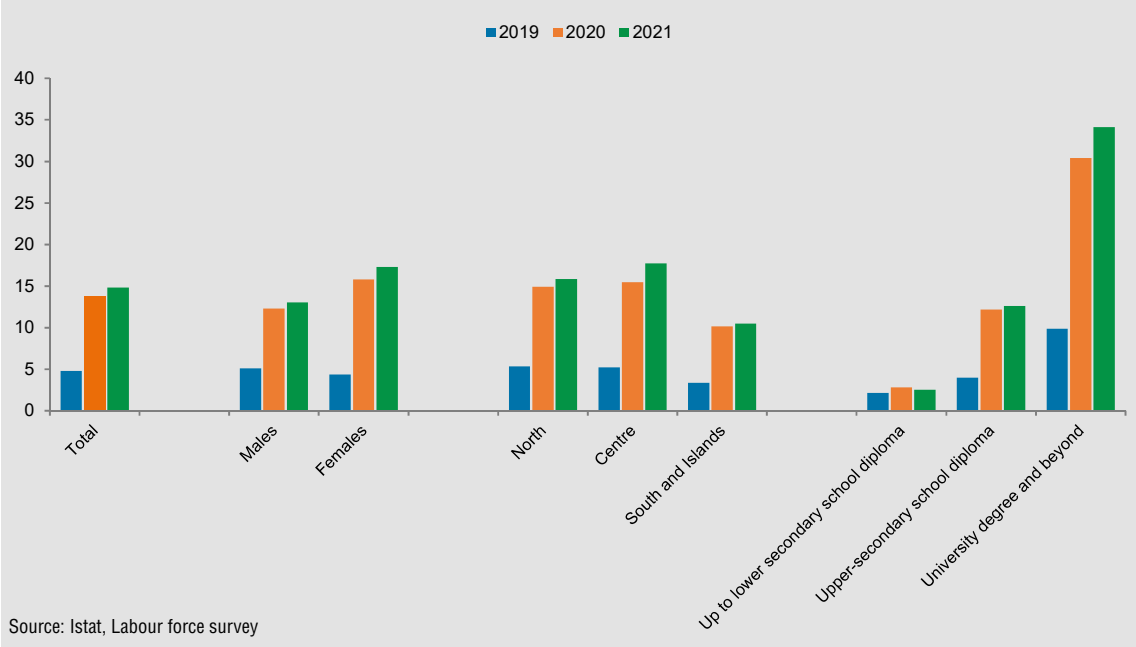
Women aged between 25 and 49 were employed 73.9% of the time if they had no children, and 53.9% of the time if they had at least one child under the age of 6; the ratio of their employment rates (with that of childless women in the denominator), multiplied by 100, was 73 (a value of 100 would indicate equality between the two rates) and was about 1 point lower than the previous year. The decrease was mainly due to the increase in the employment rate of women without children (+1.9 points compared to 2020) and occurred in the North (the ratio went from 80.2 to 77.6) and in the South and Islands (from 67.6 to 65.2), but not in the Centre, where the indicator increased (from 81.0 to 84.5) as a result of the increase in the employment rate among women with young children.
However, the most difficult situation remained in the South and Islands, where only 35.3% of women with small children worked, almost half as many as in the Centre (62.7%) and the North (64.3%).
The gap between women with pre-school-age children and those without children, however, narrowed as the level of education increased: the value of the ratio reached almost 93 (increasing compared to 2020) if the woman had at least a university degree, fell to 70.9 if the qualification was upper-secondary and plummeted to 48.7 for women with at most a secondary school diploma (Figure 4).
Domestic and care work within the family was still not equally distributed between men and women and required the latter to modulate their extra-domestic activities according to care work. The asymmetry index - which measures how much of the time spent by both partners on domestic work is attributed to women - reached 62.6% (average 2020/21) when calculated for women aged 25 to 44 in couples in which both partners are employed.
Compared to 2019/20, the index improved, albeit less markedly than up to 2018/19, but territorial differences remained, with the percentage higher in the South and Islands(69.9%) than in the North (60.0%) and the Centre (62.4%).

More employed persons working from home

The pandemic created the conditions for large-scale experimentation with remote working, particularly from home. The need to continue working within the restrictions imposed by the pandemic had the effect of forcing the cultural resistance that, until then, had slowed down the spread of smart working, requiring the expansion of technological equipment and the skills needed to carry out the job away from the workplace.
In 2019, working from home was working mode for just 4.8% of the employed; in the second quarter of 2020, it peaked at 19.7%. The investments made and the reasons supporting its use (better environmental sustainability, reduced home-to-work commuting time, better work-life balance, greater autonomy and flexibility) suggest that high levels of smart working should be maintained even after the health emergency has passed.
Between 2020 and 2021, the use of work from home increased from 13.8% to 14.8%

(about +260 thousand employed - Figure 5), although with a trend still linked, in addition to seasonality, to the pandemic trend: work from home was more frequent in the first quarter of 2021 (19.1%), decreased in the second quarter (15.7%), reached a minimum in the third (11.7%) and rose again in the fourth (13.0%). During 2021, there was a gradual reduction in the share of those who work at home most of the time, while the share of those who work from home less than half of the days remained almost unchanged, with a convergence towards a mixed-mode of work, combining work from home and work in the workplace[3].
Between 2020 and 2021, the share of employed women working from home increased more than that of men (+1.5 and +0.8 points respectively) and reached 17.3% (4.3 per-

Figure 5. Employed persons who worked from home by gender, geographic areas and educational qualification. Years 2019-2021. Percentages

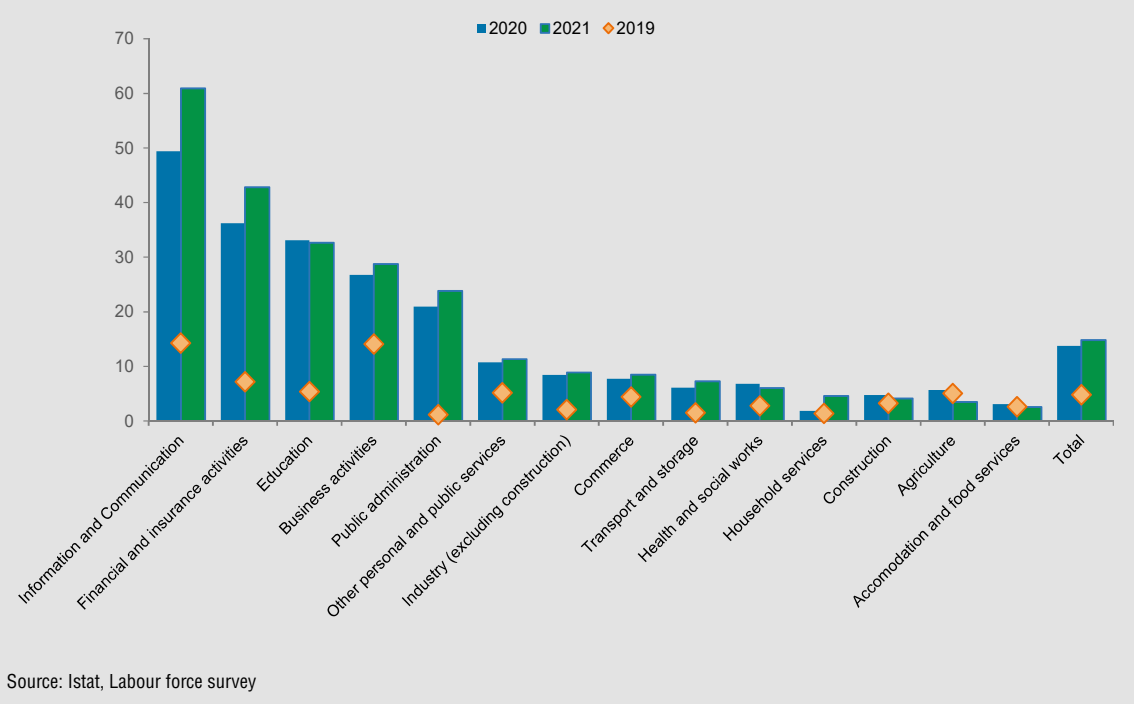


Source: Istat, Labour force survey

centage points more than men). This is an interesting result if one considers that before the pandemic, work from home was on average used more by men. Also in 2021, in line with previous years, work from home was more widespread in the Centre, where there was also the greatest increase compared to 2020 (the percentage rose by 2.3 points to 17.7%), and in the North (15.9%) compared to the South and Islands (10.5%); a high share of employed people working from home was also recorded among people with a tertiary level of education among whom, following the increase of 3.7 points compared to 2020, it reached 34.1%.
The association between work from home and profession can be seen in the fact that almost a third of the employed (31.9%) in skilled professions worked from home, a share that rises to 40.9% if it was an intellectual, scientific or highly specialised profession. The figure was lower for clerks (21.7%), which, however, were the ones with the largest increase over the two-year period (+3.9 points; the share was only 1.4% in 2019). As far as sectors of economic activity are concerned, work from home was most widespread in In-

3 The question in 2021 underwent changes in the wording of the answer modes, so a point-by-point comparison at this level of detail between 2021 and previous years is not possible.

Figure 6. Employed persons who worked from home by sector of economic activity. Years 2019-2021. Percentages



Source: Istat, Labour force survey

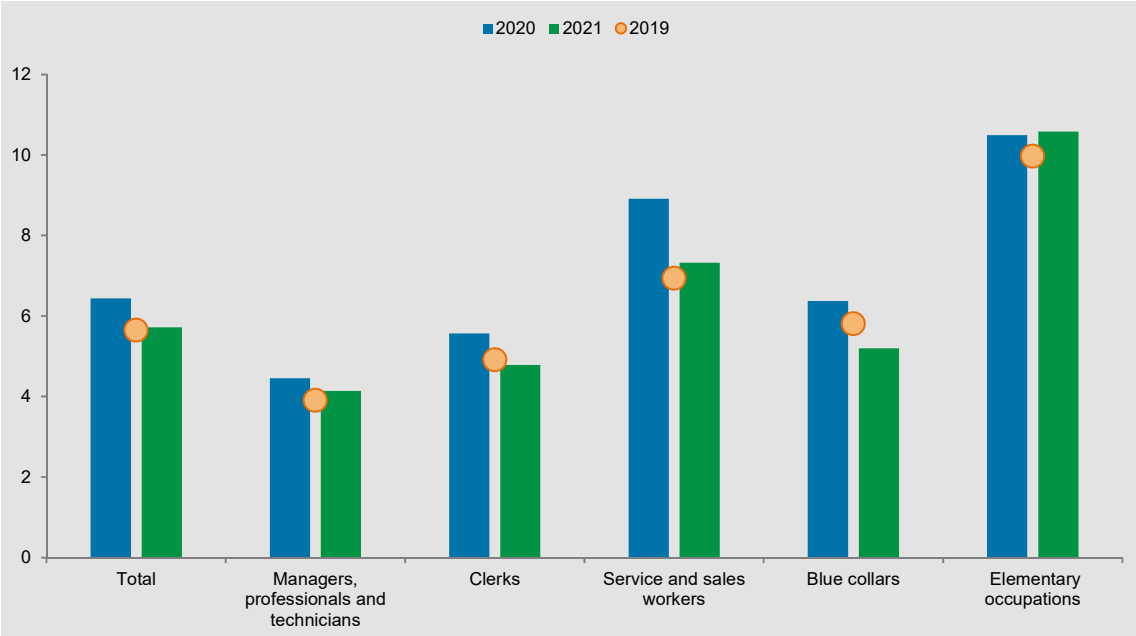
formation and Communication (60.9%) and Financial and Insurance Activities (42.8%); on the other hand, professions that can most easily be performed remotely are concentrated in these sectors. Finally, the use of work from home remained high in the Education sector (32.6%), although linked to the health emergency, and in any case down compared to 2020 (Figure 6).

Job satisfaction rose and perception of insecurity fell

Job satisfaction increased in 2020 and continued to rise in 2021. Overall, 49.9% of the employed are very satisfied with their job, a percentage that is 1 point higher than in 2020 and about 4 points higher than in 2019. The indicator summarises the scores on the various aspects surveyed: earnings, career opportunities, number of hours worked, job stability, home-work distance, interest in work. In detail, the share of very satisfied workers (score 8-10 on a scale from 0 to 10) was lowest for career opportunity (31.4%) and earnings (38.1%), while it exceeded 50% for all other aspects. Between 2020 and 2021, the share of those very satisfied with earnings grew (+1.8 points) and the share of those satisfied with job stability also grew (+1.9 points); the share of those satisfied with the distance between home and work, which had already increased between 2019 and 2020, remained stable.
The differences between men and women were minimal, in both cases, the very satisfied represent about half of the total (50.2% among men, 49.5% among women). On the other hand, workers over 35 were more satisfied (50.3%) than younger employees (48.4%), as were workers resident in the Centre-North (over 51%) compared to those in the South and Islands (44.0%).
Satisfaction increased with increasing educational qualifications, reaching its highest value

among university graduates (56.2%); the least satisfied were foreign populations (36.5% compared to 51.4% of Italians).
In 2020, the health emergency, particularly in the second quarter, seemed to have increased the perception of vulnerability among workers: those who considered it likely to lose their job within 6 months and at the same time unlikely to find a similar one, had increased by 0.8 points to account for 6.4%. In 2021, this percentage returned to 2019 levels and stood at 5.7%. Only among those employed in unskilled occupations the perception of insecurity remained stable between 2020 and 2021: the share of the insecure, which was also very high in the years before the emergency (10.0% in 2019), reached 10.5% in 2020 and has not fallen since. On the contrary, those employed in trade and services occupations showed the sharpest decline (-1.6 points between 2020 and 2021), but they were also those who had recorded the largest increase between 2019 and 2020 (+2 points - Figure 7).
Those who perceived themselves to be most insecure were above all the most vulnerable categories in the labour market: workers in the South and Islands (8.1%), young people

Figure 7. Employed persons who in the next 6 months believe it is likely to lose their current job and are unlikely or not at all likely to find another similar job by occupation. Years 2019-2021. Percentages



Source: Istat, Labour force survey

(8.6%), those with low educational qualifications (7.0%) and foreign population (8.9%). The highest share was recorded among fixed-term employees: in 2021, 23.2% considered it likely to lose their job and difficult to find another one (-0.2 points).
The sector of economic activity in which a more widespread perception of insecurity was Accomodation and food services (11.4%); despite the decrease compared to 2020 (-2.1 points), it did not return to the value of 2019 (when it was 8.7%). Finally, the Education sector was the only one where the share of workers perceiving strong vulnerability (7.6%) increased (it was 6.1% in 2020 and 5.9% in 2019). Both of these show a strong link to the employment effects of the pandemic crisis.

Decline in accidents at work

The incidence rate of fatal occupational injuries or injuries leading to permanent disability has continued to decline for several years now, partly as a result of a gradual transformation of the production system towards less risky jobs and greater regulatory focus on worker safety.
In 2019, the incidence rate of fatal occupational injuries or injuries leading to permanent disability was 10.8 per 10,000 employed, down from 11.7 in 2018, and was higher among men (14.6 per 10,000 employed), the over-50s (15.7 per 10,000 employed between 50 and 64 years old and 26.1 per 10,000 employed among the over-65s) and foreign population (13.6 per 10,000 employed); higher rate also in the South and Islands (13.2 per 10 thousand employed), compared to the North (9.5) and the Centre (11.1). The decline between 2018 and 2019 involved all categories and the entire Country.

Indicators

1. **Employment rate (20-64 year-olds):** Percentage of employed people aged 20-64 on total people aged 20-64.
   Source: Istat, Labour force survey.
2. **Non-participation rate:** Percentage of unemployed people and the potential labour force (those who have not looked for a job in the past 4 weeks but willing to work), on the total labour force (employed and unemployed) plus the potential labour force, referred to population aged 15-74.
   Source: Istat, Labour force survey.
3. **Transition rate (12 months time-distance) from non-standard to standard employment:** Percentage of people employed in non-standard jobs at the time t0 (employees with temporary jobs + term-contract workers + project worker + occasional hired workers + single customer self-employed without employees) which have a standard job (permanent employees + self-employed with employees + no single customer self-employed without employees) a year later on total people employed in non-standard jobs at the time t0.
   Source: Istat, Labour force survey.
4. **Share of employed persons with temporary jobs for at least 5 years:** Percentage of temporary employees and term-contract workers who began their current job at least 5 years prior to interview on total temporary employees and term-contract workers.
   Source: Istat, Labour force survey.
5. **Share of employees with below 2/3 of median hourly earnings:** Percentage of employees with an hourly wage of less than 2/3 of the median on total number of employees.
   Source: Istat, Labour force survey.
6. **Share of over-qualified employed persons:** Percentage of people employed with a qualification higher than the qualification held by the majority of people who exercise the same profession on total employed people.
   Source: Istat, Labour force survey.
7. **Incidence rate of fatal occupational injuries or injuries leading to permanent disability:** Proportion of fatal occupational injuries or injuries leading to permanent disability on total people employed (excluding the armed forces) per 10,000.
   Source: Inail.
8. **Share of employed persons not in regular occupation:** People employed who do not comply with work, fiscal and pension laws on total people employed.
   Source: Istat, National Accounts.
9. **Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children:** Employment rate of women aged 25-49 with at least one child aged 0-5 / Employment rate of women aged 25-49 without children.
   Source: Istat, Labour force survey.
10. **Share of employed people aged 15-64 years working over 60 hours per week (including paid work and household work):** Percentage of employed people aged 15-64 years that work over 60 hours per week of paid work and household work.
    Source: Istat, Time use survey.
11. **Share of household work time carried out by women in a couple on the total of the household work time:** Household work time carried out by women / household work time carried out by both partner * 100.
    Source: Istat, Time use survey - Survey on Aspects of daily life.
12. **Job satisfaction:** Percentage of employed persons with an average level of satisfaction from 8 to 10 considering the following dimensions: earnings, career opportunities, number of hours worked, job stability, home-work distance, interest in the work.
    Source: Istat, Labour force survey.
13. **Share of employed persons who feel their work unsecure:** Employed persons who, in the following 6 months, consider it is likely they lose their job and it is not at all or a little likely that they find another similar job / Total employed persons *100.
    Source: Istat, Labour force survey.
14. **Involuntary part time:** People employed in a part time job because they did not find a full time job on total employed people.
    Source: Istat, Labour force survey.
15. **Employed persons working from home:** Employed persons working from home in the last four weeks as a percentage of the total employment.
    Source: Istat, Labour force survey.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Employment rate (20-64 years old) (a) 2021	Non-participation rate (b) 2021	Transition rate (12 months time distance) from non-standard to standard employment (c) 2020 (*)	Share of employed persons with temporary jobs for at least 5 years (d) 2021	Share of employees with below 2/3 of median hourly earnings (e) 2020 (*)	Share of over-qualified employed persons (f) 2021	Incidence rate of fatal occupational injuries or injuries leading to permanent disability (g) 2019
Piemonte	69.8	13.2	26.3	11.2	9.2	24.0	7.6
Valle d'Aosta/Vallée d'Aoste	71.6	12.7	19.2	13.6	7.7	22.5	9.5
Liguria	68.0	14.5	19.2	13.5	8.9	27.1	12.8
Lombardia	71.6	11.3	28.6	11.1	6.9	22.9	7.4
Trentino-Alto Adige/Südtirol	74.2	9.1	23.7	18.3	6.3	21.0	12.4
Bolzano/Bozen	*75.8*	*8.2*	*23.7*	*21.0*	*6.5*	*17.1*	*13.0*
Trento	*72.5*	*10.0*	*23.7*	*16.0*	*6.1*	*25.1*	*11.7*
Veneto	70.8	10.2	31.1	10.8	8.2	26.5	10.8
Friuli-Venezia Giulia	72.3	10.9	19.7	15.9	6.9	30.2	9.6
Emilia-Romagna	73.5	10.0	25.6	17.3	8.3	27.0	12.8
Toscana	70.5	13.6	26.4	16.9	9.1	26.1	13.7
Umbria	69.3	13.1	24.0	15.6	9.5	32.4	15.5
Marche	68.9	13.7	21.1	13.3	8.3	29.7	14.8
Lazio	64.4	18.9	21.1	17.7	10.8	29.4	7.7
Abruzzo	62.1	18.9	25.2	14.4	10.8	29.7	15.9
Molise	55.9	25.8	27.0	17.9	9.4	31.4	12.0
Campania	45.0	37.4	15.2	19.5	15.1	24.5	10.8
Puglia	50.5	30.1	12.8	25.4	17.6	23.8	12.0
Basilicata	56.7	24.1	16.8	24.9	14.2	29.9	21.8
Calabria	45.5	37.2	9.2	27.7	19.0	26.4	15.5
Sicilia	44.5	38.3	18.1	31.3	16.1	25.1	13.5
Sardegna	57.0	26.7	17.1	15.9	10.7	23.9	14.2
North	71.4	11.2	26.9	13.0	7.8	24.9	9.5
North-west	70.8	12.1	26.9	11.4	7.7	23.6	8.0
North-east	72.3	10.1	26.8	14.7	7.9	26.6	11.6
Centre	67.2	16.1	23.0	16.7	9.9	28.6	11.1
South and islands	48.5	33.5	15.8	23.8	15.3	25.3	13.2
South	48.9	32.7	14.8	22.2	15.6	25.6	12.9
Islands	47.7	35.3	17.8	27.1	14.6	24.8	13.7
Italy	**62.7**	**19.4**	**22.4**	**17.5**	**10.1**	**25.8**	**10.8**

(a) Per 100 persons aged 20-64;
(b) Per 100 workforce and part of the potential workforce aged 15-74;
(c) Per 100 persons employed in unstable jobs at time t0;
(d) Per 100 temporary employees and collaborators;
(e) Per 100 employees;

Share of employed persons not in regular occupation (f) 2019	Ratio of employment rate for women aged 25-49 with at least one child aged 0-5 to the employment rate of women 25-49 years without children, multiplied by 100 (h) 2021	Share of employed people aged 15-64 years working over 60 hours per week (including paid work and household work) (f) 2014	Share of household work time carried out by women in a couple on the total of the household work time (i) 2021	Share of employed persons who feel satisfied with their work (l) 2021	Share of employed persons who feel their work unsecure (f) 2021	Involuntary part time (f) 2021	Employed persons working from home (f) 2021
10.0	77.2	51.3	....	56.2	4.6	9.7	15.0
9.8	84.1	47.0	....	59.2	5.3	9.0	10.8
11.8	70.8	51.7	....	48.1	4.9	11.4	15.9
10.0	77.3	51.8	....	52.2	4.4	9.3	18.5
8.9	73.9	53.7	....	61.7	4.0	6.3	13.7
8.4	*68.8*	*54.6*	....	*63.0*	*3.5*	*4.4*	*13.6*
9.5	*79.8*	*52.7*	....	*60.4*	*4.4*	*8.2*	*13.8*
8.8	78.7	51.9	....	48.9	4.3	8.3	12.5
9.7	71.6	51.7	....	50.5	4.5	10.0	13.4
9.5	81.0	49.4	....	53.2	5.7	9.0	15.7
10.5	87.6	52.1	....	52.8	5.1	12.0	13.8
13.0	74.3	52.8	....	56.9	6.0	11.5	11.5
10.5	84.6	53.1	....	53.9	7.0	10.7	11.7
15.3	84.3	48.0	....	48.0	5.0	13.3	23.0
14.5	77.8	47.1	....	47.0	7.0	13.1	9.7
15.8	93.1	50.6	....	53.8	5.2	12.4	9.2
18.7	59.9	47.8	....	38.8	7.7	13.6	11.7
15.9	64.5	45.1	....	47.7	8.4	14.2	9.7
14.3	75.2	48.6	....	41.7	9.3	13.4	9.9
21.5	69.6	49.4	....	40.1	8.1	16.0	9.3
18.5	69.1	38.7	....	42.8	8.4	16.3	9.8
15.3	76.8	49.8	....	53.2	8.9	17.6	12.5
9.7	77.6	51.4	60.0	52.5	4.7	9.1	15.9
10.2	76.8	51.6	58.7	52.9	4.5	9.6	17.3
9.2	78.5	51.1	61.6	52.0	4.9	8.5	14.0
13.1	84.5	50.3	62.4	51.0	5.4	12.4	17.7
17.5	65.2	45.6	69.9	44.0	8.1	14.8	10.5
17.5	64.7	47.2	69.0	43.1	7.9	14.0	10.4
17.6	66.1	42.0	71.1	45.9	8.5	16.7	10.7
12.6	**73.0**	**49.6**	**62.6**	**49.9**	**5.7**	**11.3**	**14.8**

(f) Per 100 employed;
(g) Per 10,000 employed;
(h) Per 100;
(i) Per 100 persons aged 15-64.
* The data is based on the regulation in force until 2020.

4. Economic well-being[1]

After the outbreak of the *COVID-19* pandemic, which affected our economic system in unprecedented forms and intensity, economic well-being indicators show a picture of slow improvement.
In 2020, the health emergency strongly conditioned the purchasing behaviour of households, although government support measures mitigated its effects. Alongside the fall in income, final consumption expenditure fell significantly, while there was an increase in the propensity to save, which, on average in 2020, reached the highest level in the last twenty years (15.6%). This trend is explained both by the desire to accumulate precautionary reserves, in line with the negative outlook on income and employment and by the evolution of the pandemic, which has limited and discouraged certain types of purchases. GDP dropped by 8.9% compared to 2019 and the incidence of absolute poverty reached its highest level since 2005 (the first year for which data is available).
In 2021, household disposable income and purchasing power recovered, although remaining below pre-crisis levels. The sustained growth in final consumption, on the other hand, generated a decline in the propensity to save, which, however, did not return to pre-crisis levels. The share of households in absolute poverty showed substantially stable values at national level, although with a growth in the South and Islands (as shown by preliminary estimates).
The subjective assessment of the consumer confidence climate confirmed the recovery, reaching its highest value in September 2021 since the start of the series (January 1998). However, the analysis of the subjective indicators showed that in 2021, the percentage of households declaring a worsening of their economic situation compared to the previous year increased for the second year in a row, alongside the increase in households reaching the end of the month with great difficulty.

Income, purchasing power, consumer spending and savings: signs of recovery

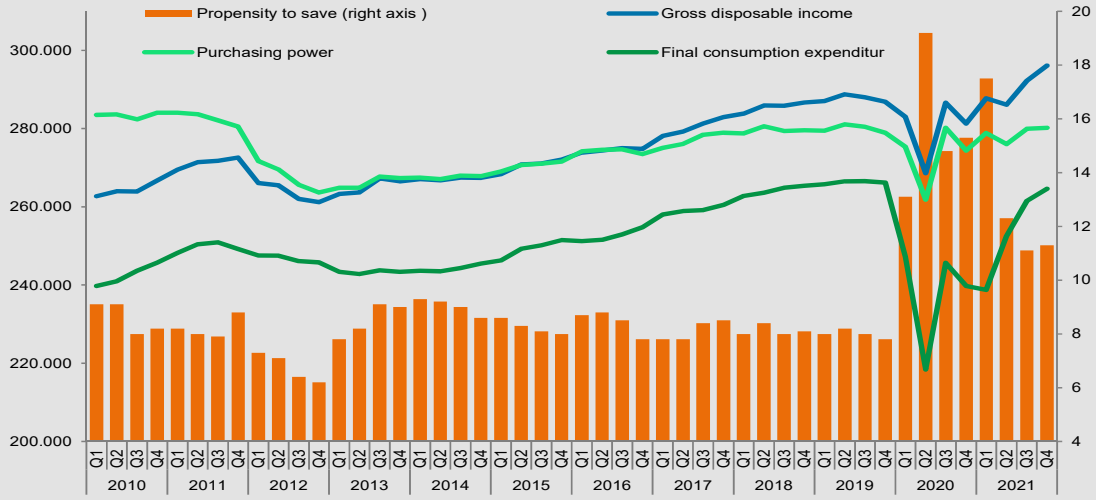
After declining in the last quarter of the previous year, household disposable income and purchasing power rose by +2.3% and +1.6% respectively in the first quarter of 2021, although they remained below their pre-crisis levels (Figure 1); in the same period, the propensity to save of consumer households rose by 2.2 percentage points.
In the second quarter, while household disposable income and purchasing power remained broadly stable, sustained growth in final consumption reduced the propensity to save.
The third quarter saw a significant increase in both household disposable income and purchasing power (+2.2% and +1.4% respectively), which was accompanied by further growth in final consumption that generated a further drop in the propensity to save (11.1%), which nevertheless remained at levels above pre-crisis[2]. In the fourth quarter, the gross disposable income of consumer households increased by 1.3% compared to the previous quarter, while the propensity to save amounted to 11.3% (+0.2 percentage points), the purchasing

1 This chapter was edited by Clodia Delle Fratte and Francesca Lariccia, with contributions from: Barbara Baldazzi, Claudia Cicconi, Stefania Cuicchio, Valeria de Martino, Francesca Gallo, Stefano Gerosa, Daniela Lo Castro, Federico Polidoro, Carmela Squarcio.

2 See "Quarterly Non-Financial Account of General Government, Income and Savings of Households and Profits of Non-Financial Corporations" https://www.istat.it/it/files//2022/04/comunicato-QSA2021Q4.pdf

power of households was substantially stable. At the same time, the GDP increased markedly (+2.6% the cyclical variation), continuing the phase of rapid recovery in production rates that started in the second quarter. The improvement in the Italian economy was widespread among sectors, but with a more marked intensity of added value in services (+3.4% the cyclical variation) than in industry (excl. constructions) and construction (0.8% and +0.6% respectively).

Figure 1. Propensity to save (right-hand scale), gross disposable income, purchasing power (a)**, final consumption expenditure of consumer households. Years 2010-2021. Seasonally adjusted data in millions of euros and percentages**



Source: Istat, National Accounts
(a) Gross disposable income of consumer households in real terms, obtained using the household final consumption expenditure deflator (chained values with reference year 2015).

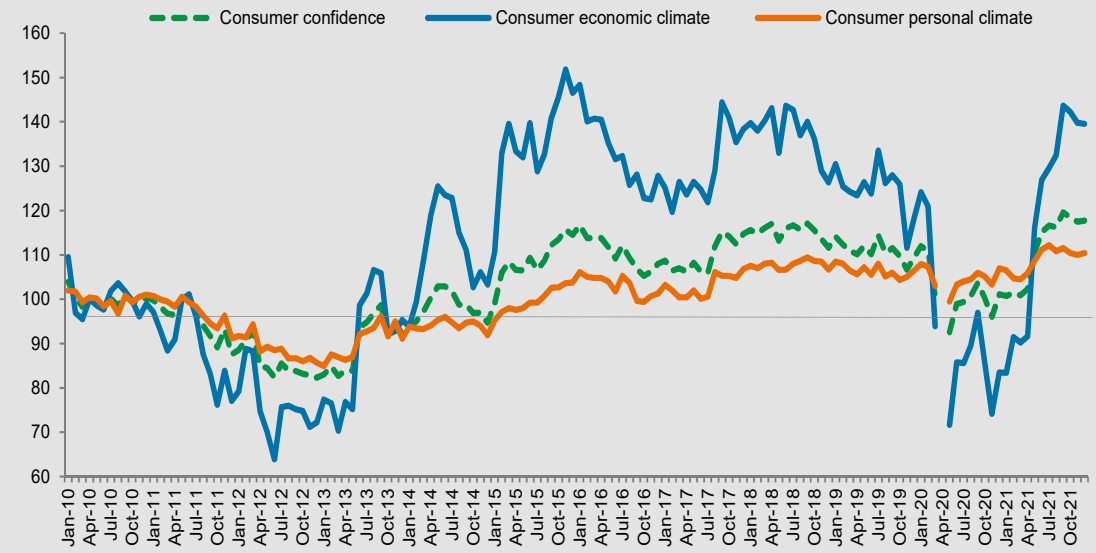
Positive dynamics for consumer confidence

Consumer confidence[3], which had plunged in March and May 2020, improved again in 2021, reaching in September its highest value since the start of the series (January 1998). This increase was mainly affected by the economic climate (Figure 2), calculated on the opinions and expectations on the situation in Italy; the indicator, on which the epidemic trend had a strong impact (the greatest contractions were felt in the months in which the contagions and the consequent containment measures started up again), increased significantly from May 2021, recovering the very low levels of the previous year. The current and

3 The consumer confidence climate is compiled on the basis of nine questions designed to assess consumer optimism/pessimism (opinions and expectations of the economic situation in Italy; expectations on unemployment; opinions and expectations on the economic situation of the household; current opportunities and future possibilities for savings; opportunities to purchase durable goods; opinions on the household budget). The results of the nine questions, expressed as weighted balances on raw data, are aggregated by simple arithmetic mean; the result is then reported as an index (base 2010) and seasonally adjusted using the direct method. Breakdowns of the total climate are also proposed, reported as index (base 2010) and seasonally adjusted (where necessary), i.e.: a) Economic climate, calculated on opinions and expectations about Italy's economic situation and expectations about unemployment; b) Personal climate, calculated on opinions and expectations about the economic situation of the household; current opportunities and future possibilities for saving; opportunities to purchase durable goods; household financial balance; c) Current climate, calculated on opinions; d) Future climate: calculated on expectations. See also: https://www.istat.it/it/archivio/fiducia+consumatori+e+imprese

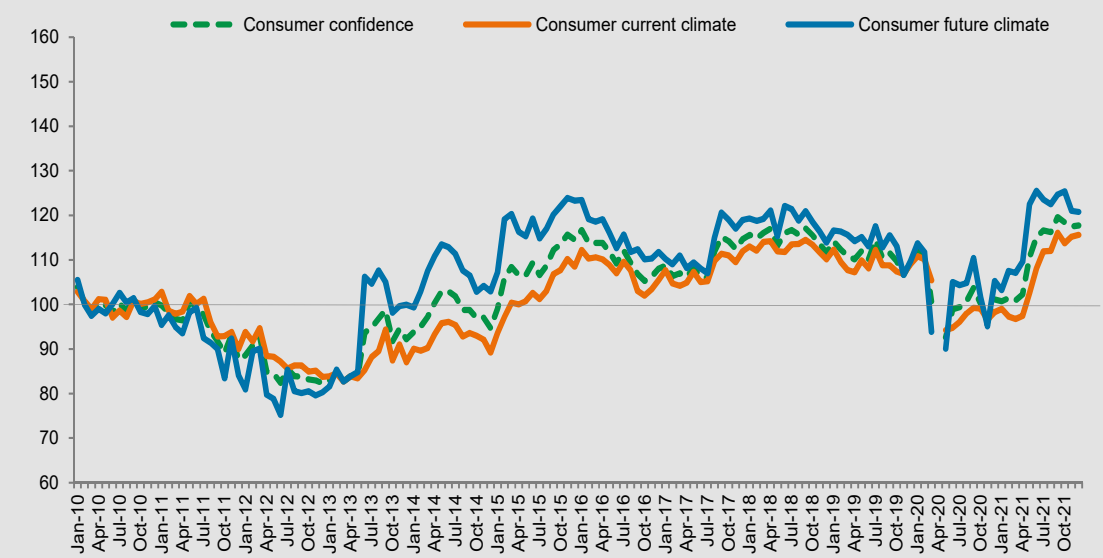
future climate also show a positive dynamic (Figure 3), with a strong recovery from 2020: values of the current climate, below 100 from May 2020 to April 2021, reached a peak (116.1) in September 2021; while the future climate reached a maximum (125.5) in June of the same year.

Figure 2. Indices of Consumer Confidence, Consumer Economic Climate (a)**, Consumer Personal Climate** (b)**. Years 2010-2021** (c)**. Monthly seasonally adjusted indices base 2010=100**



Source: Istat, Survey on consumer and business confidence
(a) Consumer Economic Climate, related to both the assessments and expectations on the Italian general economic situation and the expectations on unemployment.
(b) Consumer Personal Climate, related to assessments and expectations on the households' financial situation, assessments on savings current environment and expectations on savings intentions, assessments on the durable good major purchases, assessments on the family budget. Series not affected by seasonality.
(c)The survey for April 2020 has been suspended due to the pandemic.

Figure 3. Indices of Consumer Confidence, Consumer Current Climate (a)**, Consumer Future Climate** (b)**. Years 2010-2021** (c)

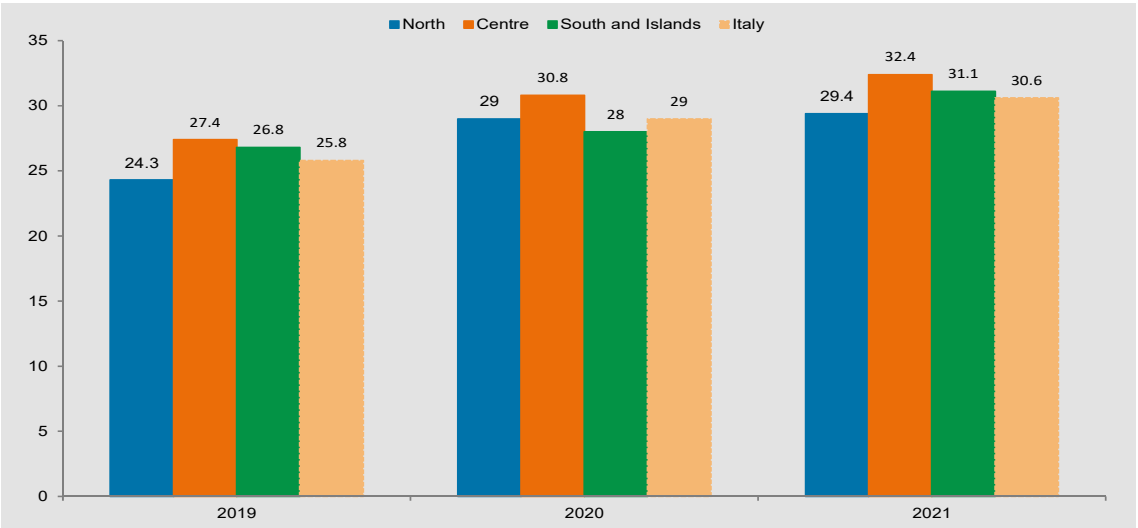


Source: Istat, Survey on consumer and business confidence
(a) Consumer Current Climate, related to questions related to the assessments on economic situation. Series not affected by seasonality.
(b) Consumer Future Climate, related to questions related to the expectations on economic situation.
(c) The survey for April 2020 has been suspended due to the pandemic.

Households economic situation worsened again in 2021

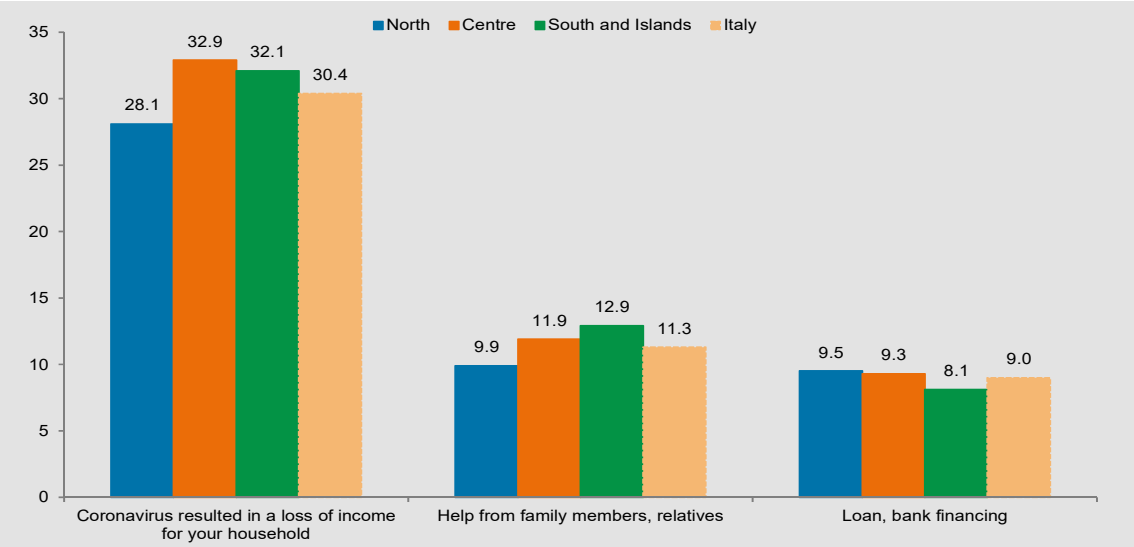
Despite the recovering picture, 2021 was not an easy year for Italian households, the continuation of the health emergency has in fact determined a further increase in the share of households declaring that their economic situation has worsened compared to the previous year: 30.6% in 2021 (it was 29,0% in 2020), almost 5 percentage points more than in 2019 (25.8%), with values of the indicator equal to 32.4% in the Centre, 31.1% in the South and Islands and 29.4% in the North. The increase can be seen in all three breakdowns, but in the Centre and, above all, in the North, the highest increase occurred in the first year of the pandemic, while in the South and Islands it was mainly in the second year (Figure 4).
Moreover, a substantial proportion of households declare that *COVID-19* has led to a loss of income for their household (32.9%, 32.1% and 28.1%, respectively in the Centre, the South and Islands and the North), 11.3% have had to resort to economic aid from family members or relatives - a behaviour that is more widespread among households in the South and Islands (12.9%) and in the Centre (11.9%) than among those in the North (9.9%) - and 9% of households have requested bank loans or financing (more frequently in the North, with 9.5%, and in the Centre, with 9.3%, compared to 8.1% recorded in the South and Islands) (Figure 5).

Figure 4. Households reporting that the household economic situation has worsened or worsened a lot compared to the previous year by geographic area. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life

Figure 5. Households reporting that Coronavirus resulted in a loss of income for your household, help from family members, relatives and loan, bank financing by geographic area. Year 2021. Percentages



Source: Istat, Survey on Aspects of daily life

Absolute poverty stable in 2021, but rising in the South and Islands

The severe economic crisis caused by the pandemic in 2020, resulted in an increase in absolute poverty, which reached its highest level since 2005 (the first year from which the indicator is available) with about 1 million more absolute poor, and incidence values of 7.7% for households and 9.4% for individuals (Figure 6).

In 2021, despite the changed economic scenario, absolute poverty remained stable, affecting more than 1 million 950 thousand households (7.5%) and more than 5 million 500 thousand individuals. However, it should be noted that, without the growth in consumer prices recorded in 2021 (+1.9%), the incidence of absolute poverty would have been 7.0% at the household level and 8.8% at the individual level, slightly lower, therefore, than in 2020.

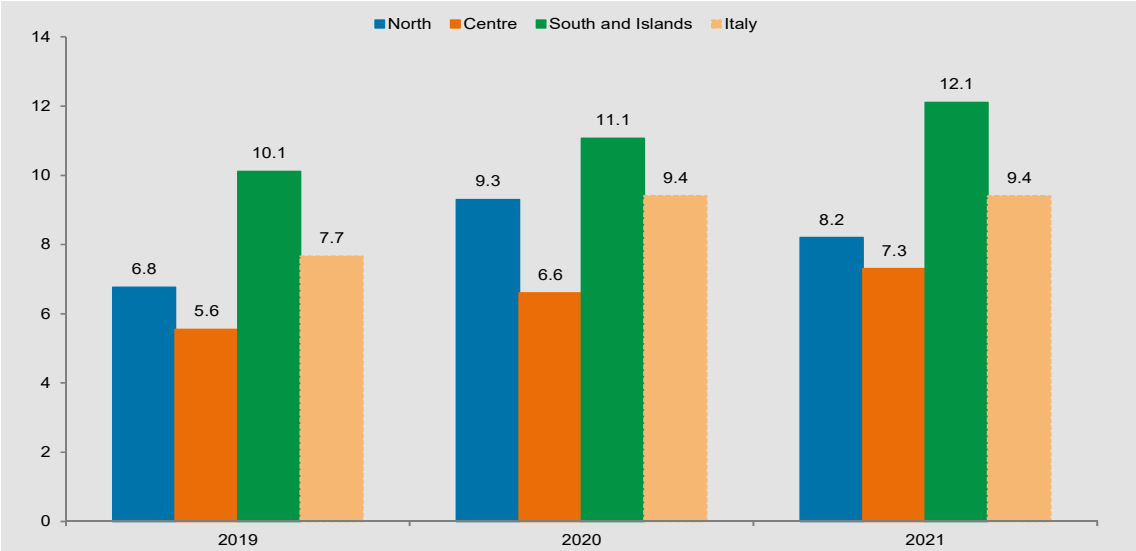
In 2021, the North partially recovered the sharp increase in absolute poverty observed in the first year of the pandemic, although it did not return to the levels observed in the previous year (6.8%, 9.3% and 8.2% in 2019, 2020 and 2021, respectively).

In the South and Islands, on the other hand, the number of poor people rose by almost 196,000 and the incidence of poverty was higher and rising, reaching 12.1% for individuals (it was 11.1% in 2020). Finally, the Centre presented the lowest value, although even in this area of the Country the incidence increased among individuals from 6.6% in 2020 to 7.3% in 2021.

Looking at the composition by citizenship, if in 2020 the incidence of absolute poverty increased both for households composed of Italians only and for those with at least one foreigner, with the latter experiencing a much more significant spread of the phenomenon, in 2021, there was a further worsening among households with foreigners only (from 26.7% in 2020 to 30.6%), while with Italians only the spread of the phenomenon remained stable (5.7%).

In general, compared with 2020, there was substantial stability for the different family types. The incidence of absolute poverty in 2021 remained higher for larger households: households in which there are couples with three or more children recorded an incidence of 20.0%, followed by households of other types with 16.3%, the most common. The presence of minor children continues to be a factor that most exposes households to hardship (11.5%), while the share of households with at least one elderly person in poverty was 5.5%, stable with respect to 2020 (5.6%), confirming the important protective role played by pension incomes that guarantee regular income in the household.
The total number of children in absolute poverty in 2021 was 1,384 million: the incidence remained high at 14.2%, stable compared to 2020, but almost three percentage points higher than in 2019, when it was 11.4%. The incidence of poverty was also stable among 18-34-year-olds (11.1%) and among the over-65s (5.3%).

Figure 6. Individuals in absolute poverty by geographic area. Years 2019-2021 (a)**. Percentages**



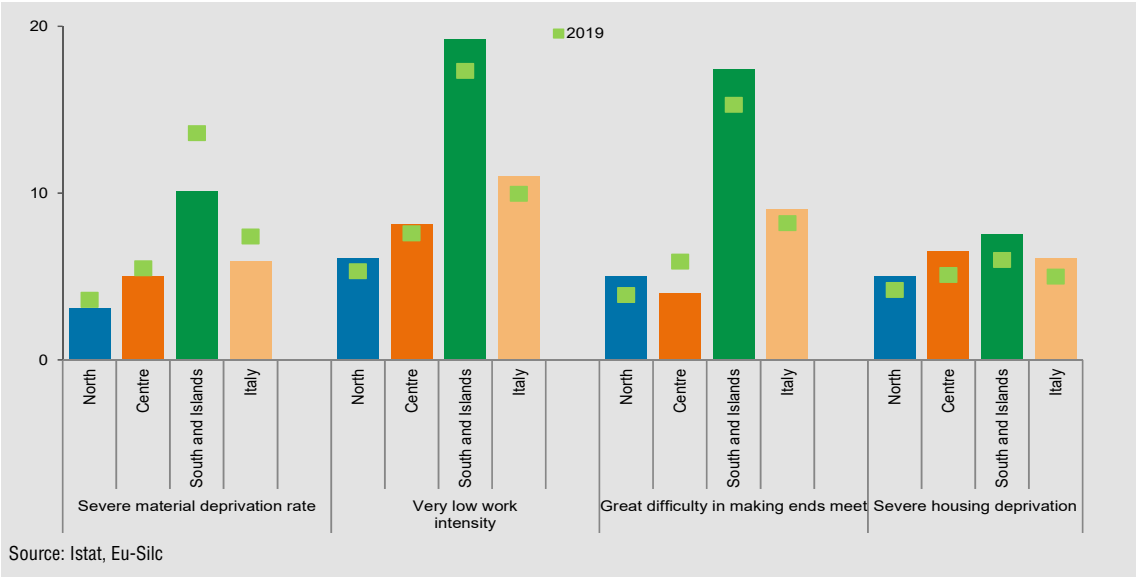
Source: Istat, Household Budget Survey
(a) Preliminary estimates for the year 2021.

Most non-monetary indicators worsen in 2020, persisting high income inequality

In 2020[4], non-monetary indicators describing the living conditions of households showed signs of worsening, although severe material deprivation affected a smaller share of individuals than in 2019.

4 The Eu-Silc 2020 edition was carried out in the year 2021, keeping the survey year as the reference period.

Figure 7. Several material deprivation rate, very low work intensity, great difficulty in making ends meet, several housing deprivation and housing cost overburden rate by geographic area. 2020 Survey year - 2019 Incomes. Percentages



Source: Istat, Eu-Silc

In 2020, the share of those living in households where, in the previous year, household members of working age worked less than 20% of their potential[5] was 11%, up from 10% in 2019. In addition, a share of 9% of people reported making ends meet with great difficulty (up from 8.2% in 2019). Individuals living in households with severe housing deprivation also increased from 5.0% to 6.1% between 2019 and 2020 (Figure 7).

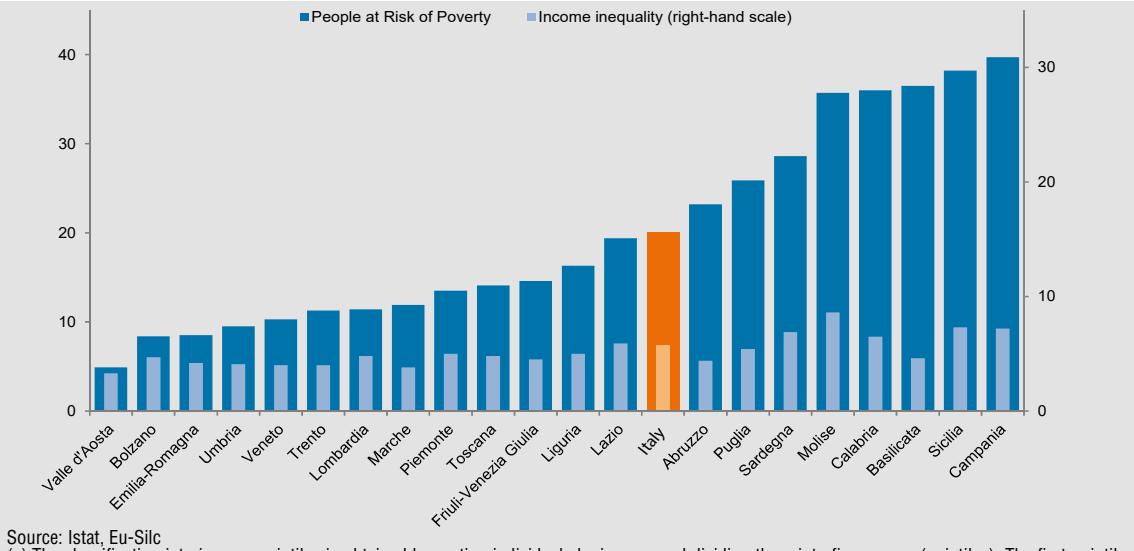
Alongside the worsening of non-monetary indicators, differences in the impact of the phenomena across the Country persist. The situation in the South and Islands was particularly critical, with the share of those living in low-work-intensity households increasing further (from 17.3% to 19.2%). The great difficulty in making ends meet affected more Southern Italy (17.4% of individuals compared with 4% in the Centre and 5% in the North), and increasing compared with 2019.

Deep territorial differences are also highlighted by the indicator on people at risk of poverty, calculated on 2019 incomes: while there were 20% of people with a net equivalised income less than or equal to 60% of the median equivalised income[6], in Sicilia and Campania the phenomenon affected more than 38% of the population (Figure 8). In the regions of Southern Italy, the higher risk of poverty was also associated with higher values of the inequality index (the ratio between the income possessed by the richest 20% of the population and the poorest 20%), which exceeded the average value for Italy (5.7, while it was 6 on 2018 incomes) in Calabria (6.5), Sardegna (6.9), Campania and Sicilia (7.2 and 7.3 respectively) and Molise (8.6).

5 The very low work intensity indicator is calculated on the total number of months worked by household members during the year preceding the survey year.

6 The median equivalent income is estimated at €10,840 (€903 per month).

Figure 8. Income inequality (a) (right-hand scale) and people at risk of poverty by region. 2020 Survey year - 2019 Incomes. Ratio of S80/S20 incomes and percentages



Source: Istat, Eu-Silc
(a) The classification into income quintiles is obtained by sorting individuals by income and dividing them into five groups (quintiles). The first quintile includes the 20% of individuals with the lowest equivalent incomes, the second those with low to middle incomes, and so on to the last quintile, which includes the 20% of individuals with the highest incomes.

Housing and material deprivation

The European indicator on severe material deprivation is based on the assessment of a plurality of "signs" of hardship that detect the lack of specific durable goods, the inability to carry out certain activities considered essential or to meet recurrent payment deadlines, due to economic problems.

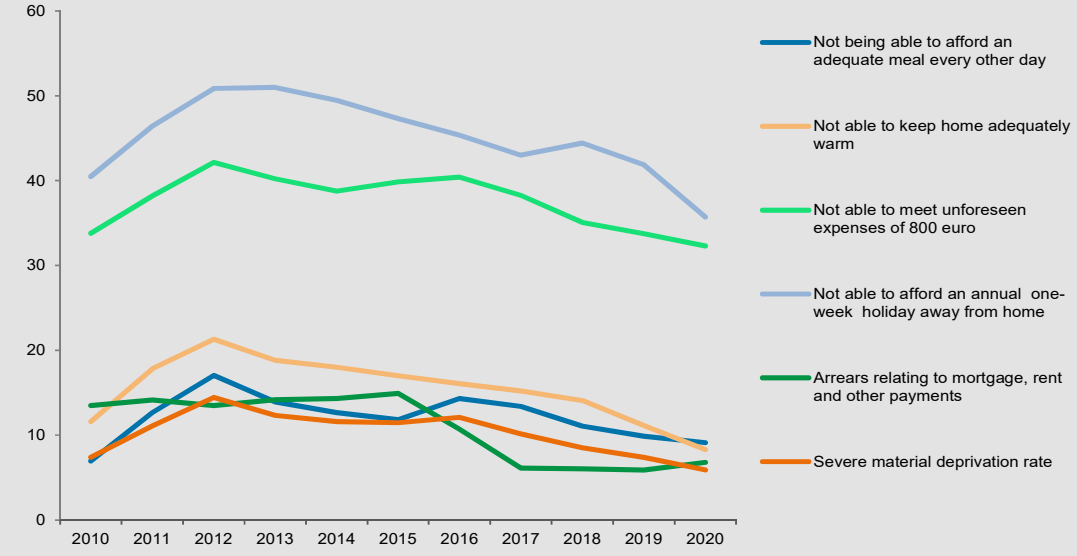
In 2020, the positive trend that, starting in 2016, has seen the share of individuals in a condition of severe material deprivation (5.9%) continued in Italy (Figure 9). However, it should be emphasised that this dynamic is mainly a consequence of the trend of only one of the nine symptoms of deprivation considered by the indicator. In 2020, in fact, the share of those who state that they could not afford to take a week's holiday per year for economic reasons decreased significantly compared to the previous year (-6.2 percentage points). This is an apparently contradictory trend compared to the economic picture of 2020, an exceptional year, characterised, among other things, by rarer, closer holidays with different characteristics (e.g. rented houses rather than hotels) for those who could afford them. There was also an unexpected trend for another of the nine indicators that the severe deprivation index takes into account: the percentage of households reporting that they were unable to meet unforeseen expenses of 850 euro (-1.5 percentage points). The reason for the improvement in these two indicators, whose trends are usually in agreement[7], is to be found in the sharp increase in the propensity to save that the recession induced by the *COVID-19* pandemic has caused in all the major economies, with particularly marked dynamics in Italy.

For a greater share of households than in 2019, being able to afford a week's holiday (if

7 For example, in both 2019 and 2020, about 80 per cent of individuals lived in households that gave the same answer about being able to afford a week's holiday a year, away from home, and being able to meet unexpected expenses.

they wanted to)[8] or being able to cope with an unexpected expenditure of 850 euro was the result of having contracted their consumption for precautionary purposes, which allowed them to count on an additional sum to meet sudden needs or to take a holiday, should they want to. In other words, at an aggregate level, the value of these indicators represents the synthesis between the worsening of the economic condition experienced by the segments of the population which was most vulnerable to the effects of the pandemic on the labour market (those employed on fixed-term contracts and in services, especially in single-income households, etc.) and the consumption behaviour of those households that, in a phase of great uncertainty and concern for the future, have managed to save more than they usually do. After all, similar trends can be observed in most other European countries, even among those that, like Italy, suffered a substantial drop in employment in 2020.
We should also remember the measures introduced to support citizens (citizenship income, emergency income, extension of the Wage Guarantee Fund, etc.)[9] that have enabled families in economic difficulty, including those that were already in trouble before the pandemic, to remain above the poverty threshold or to maintain consumption expenditure not far from the threshold. This is reflected in the value of absolute poverty (i.e. how much the monthly expenditure of poor households is below the poverty line on average), which decreased from 20.3% to 18.7% between 2019 and 2020.
Finally, it remains to be noted that, net of the holiday variable, the indicator of severe material deprivation rose slightly at the national level (from 1.9% in 2019 to 2.1% in 2020) with a more significant increase for the South and Islands (from 3.9% to 4.4%).

Figure 9. People with severe material deprivation and specific deprivation conditions. Years 2010-2020. Percentages

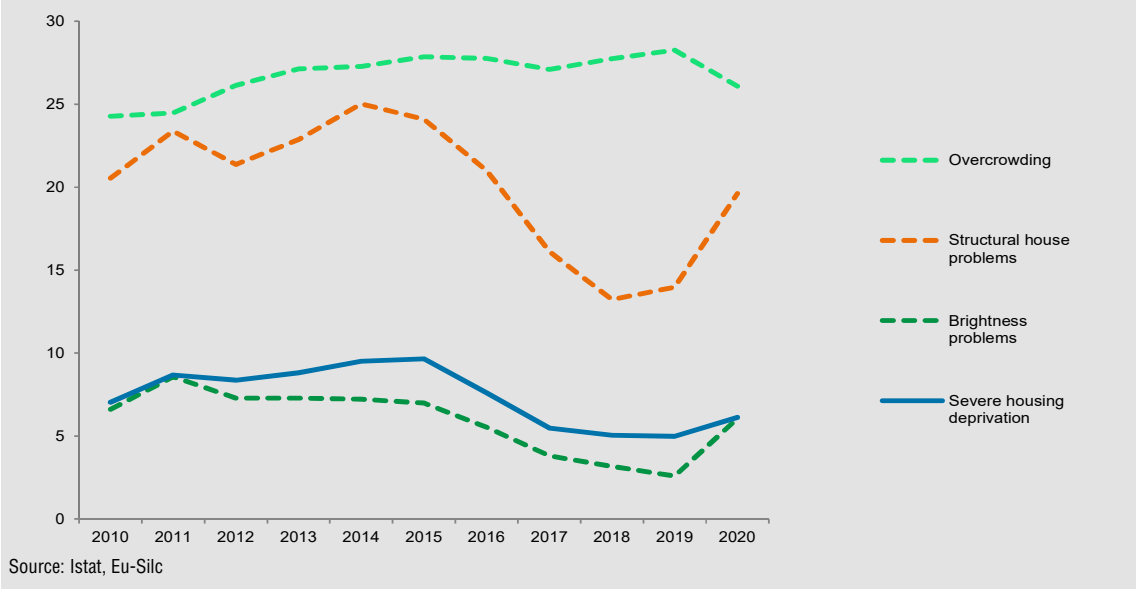


Source: Istat, Eu-Silc

8 The question reads as follows: "If you wanted, could you afford a week's holiday a year away from home?".
9 The interventions implemented for the *COVID-19* emergency reached more than 15 million beneficiaries, corresponding to about 20 million individuals, for a total expenditure of 44.5 billion euro (Inps, XX Annual Report, July 2021).

Housing conditions are monitored at the European level through a specific indicator aimed at assessing their adequacy. In 2020, the percentage of people living in severe housing deprivation[10], i.e. in overcrowded dwellings or in dwellings lacking certain services and with structural problems (ceilings, fixtures, etc.) was 6.1%, slightly up on 2019 (Figure 10). This value places Italy in fifth place in the EU ranking for worst housing conditions, surpassed only by Hungary (7.6%), Bulgaria (8.6%), Latvia (11.5%) and Romania (14.3%). In fact, the worsening, already evident in 2019, of the component of the indicator that detects the presence of structural housing problems continued, affecting 19.6% of the population in 2020, a trend that was only partially offset by the 2.2 percentage point reduction in the housing crowding indicator (from 28.3% in 2019 and 26.1% in 2020).
As far as housing costs are concerned, the deprivation indicator linked to having arrears for mortgages, rent, bills or other debts worsened slightly in 2020; the share of those who said they could not heat their home adequately also decreased (-2.8 percentage points), although this was at least partly the result of an exceptionally mild year in terms of climate, especially in winter[11].

Figure 10. People with severe housing deprivation and specific deprivation conditions. Years 2010-2020. Percentages



Source: Istat, Eu-Silc

10 According to the methodology currently used by Eurostat, a dwelling is considered overcrowded when it does not have a minimum number of rooms equal to: - one room for the household; - one room for each couple; - one room for each member aged 18 and over; - one room for every two members of the same gender aged between 12 and 17; - one room for every two members up to 11, regardless of gender.

11 Ispra, XVI Report "Climate indicators in Italy".

Indicators

1. **Gross disposable income per capita:** Ratio between gross disposable income of consumer households and the total number of residents (current prices).
   Source: Istat - National Accounts.
2. **Disposable income inequality:** Ratio of total equivalised income received by the 20% of the population with the highest income to that received by the 20% of the population with the lowest income.
   Source: Istat - Eu-Silc.
3. **People at risk of poverty:** Percentage of persons at risk of poverty, with an equivalised income less than or equal to 60% of the median equivalised income.
   Source: Istat - Eu-Silc.
4. **Per capita net wealth:** Ratio of total net wealth of households to the total number of residents.
   Source: Bank of Italy - Financial accounts and household wealth (SHIW).
5. **Absolute poverty (incidence):** Ratio of people belonging to households with total consumption expenditure equal to or below the absolute poverty threshold value and total resident people.
   Source: Istat - Household Budget Survey.
6. **Severe material deprivation rate:** Share of population living in households lacking at least 4 items out of the following 9 items: i) to pay rent or utility bills, ii) keep home adequately warm, iii) face unexpected expenses (of 850 euros from 2020 survey), iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, or could not afford) vi) a colour TV, vii) a washing machine, viii) a car, or ix) a telephone.
   Source: Istat - Eu-Silc.
7. **Severe housing deprivation:** Share of population living in a dwelling which is considered as overcrowded, while also exhibiting at least one of the housing deprivation measures. Housing deprivation is calculated by reference to households with a leaking roof, neither a bath, nor a shower, nor an indoor flushing toilet, or a dwelling considered too dark.
   Source: Istat - Eu-Silc.
8. **Great difficulty in making ends meet:** Share of individuals in households that, considering all the available income, declare to get to the end of the month with great difficulty.
   Source: Istat - Eu-Silc.
9. **Very low work intensity:** Proportion of people 0-59 living in households in which, in the previous year, household members of working age (person aged 18-59 years, excluding students aged 18-24) worked less than 20% of the number of months that could theoretically have been worked by the same household members (excluding households with only minors, students aged less than 25 and persons aged 60 and over).
   Source: Istat - Eu-Silc.
10. **Housing cost overburden rate:** Share of population living in households where the total housing costs represent more than 40 % of disposable income.
    Source: Istat - Eu-Silc.
11. **Economic situation of the household:** Households reporting that their economic situation has worsened or worsened a lot compared to the previous year.
    Source: Istat - Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Gross disposable income per capita (a)	Disposable income inequality	People at risk of poverty (b)	Per capita net wealth (a)	Absolute poverty (incidence) (b)
	2020	2019 (*)	2020 (**)	2016	2021
Piemonte	20,899	5.0	13.5	....	....
Valle d'Aosta/Vallée d'Aoste	21,168	3.3	..	....	....
Liguria	21,421	5.0	16.3	....	....
Lombardia	22,456	4.8	11.4	....	....
Trentino-Alto Adige/Südtirol	23,130	4.3	9.9	....	....
Bolzano/Bozen	*25,150*	*4.7*	*8.4*	....	....
Trento	*21,148*	*4.0*	*11.3*	....	....
Veneto	20,212	4.0	10.3	....	....
Friuli-Venezia Giulia	20,959	4.5	14.6	....	....
Emilia-Romagna	22,140	4.2	8.5	....	....
Toscana	20,117	4.8	14.1	....	....
Umbria	18,496	4.1	9.5	....	....
Marche	18,935	3.8	11.9	....	....
Lazio	19,907	5.9	19.4	....	....
Abruzzo	16,143	4.4	23.2	....	....
Molise	14,828	8.6	35.7	....	....
Campania	13,830	7.2	39.7	....	....
Puglia	14,620	5.4	25.9	....	....
Basilicata	14,454	4.6	36.5	....	....
Calabria	13,374	6.5	36.0	....	....
Sicilia	14,105	7.3	38.2	....	....
Sardegna	15,583	6.9	28.6	....	....
Noth	21,663	4.6	11.4	104,892	8.2
North-west	21,928	4.9	12.4	....	....
North-east	21,299	4.2	10.0	....	....
Centre	19,745	5.2	16.0	102,924	7.3
South and Islands	14,329	6.7	34.1	55,603	12.1
South	14,261	6.4	33.4	....	....
Islands	14,472	7.3	35.6	....	....
Italy	**18,805**	**5.7**	**20.0**	**87,451**	**9.4**

(a) In euro;
(b) Per 100 persons;
(c) Data for Liguria, Trentino-Alto Adige, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Umbria, Marche, Abruzzo, Basilicata and Sardegna statistically not very significant data, because it corresponds to a sample size between 20 and 49 units;
(d) Data for Valle d'Aosta, province of Trento and Bolzano, Friuli-Venezia Giulia, Molise and Calabria statistically not very significant data, because it corresponds to a sample size between 20 and 49 units;
(e) Percentage of people in families who manage to reach the end of the month with great difficulty;
(f) Data for Trentino-Alto Adige, province of Trento of Bolzano, Friuli-Venezia Giulia and Umbria statistically not very significant data, because it corresponds to a

Severe material deprivation rate (b) (c)	Severe housing deprivation (b) (d)	Great difficulty in making ends meet (b) (e) (f)	Very low work intensity (b) (g)	Housing cost overburden rate (b) (h)	Households economic situation (b)
2020	2020	2020	2020	2020	2021
4.4	8.7	4.6	8.2	8.5	30.8
..	9.7	..	..	4.4	33.1
4.7	5.9	5.5	6.5	7.5	27.8
3.9	4.4	6.8	6.5	5.4	28.8
1.4	5.4	2.1	3.2	7.3	26.1
..	*6.4*	*2.6*	*3.7*	*8.7*	*24.2*
..	*4.4*	..	*2.6*	*5.8*	*28.0*
2.0	4.7	3.4	5.6	4.6	30.7
3.7	2.5	4.2	5.3	5.3	30.7
1.3	3.1	4.1	4.5	5.0	28.8
2.2	5.4	3.4	6.1	6.8	35.0
3.7	7.7	2.8	4.8	5.5	28.9
4.8	5.2	5.0	6.6	3.5	31.3
7.1	7.5	4.3	10.2	6.9	31.5
6.1	12.9	16.6	6.3	5.0	30.5
..	7.0	21.3	23.0	6.5	26.8
14.0	7.9	33.0	25.6	9.5	30.6
10.4	6.0	8.6	13.8	9.1	30.8
5.4	..	..	16.8	6.0	26.4
9.1	3.0	6.9	8.8	8.0	30.2
9.5	7.7	13.1	23.2	12.5	33.1
5.1	9.4	12.2	18.7	8.5	31.7
3.1	5.0	5.0	6.1	5.9	29.4
4.1	5.8	6.0	6.9	6.4	29.3
1.9	3.9	3.6	4.9	5.1	29.6
5.0	6.5	4.0	8.1	6.4	32.4
10.1	7.5	17.4	19.2	9.5	31.1
10.9	7.1	19.5	17.9	8.5	30.3
8.4	8.2	12.8	22.0	11.4	32.7
5.9	**6.1**	**9.0**	**11.0**	**7.2**	**30.6**

sample size between 20 and 49 units;

(g) Data for Liguria, Trentino-Alto Adige, province of Trento and Bolzano, Friuli-Venezia Giulia, Umbria, Abruzzo, Molise e Basilicata statistically not very significant data, because it corresponds to a sample size between 20 and 49 units;

(h) Data for Valle d'Aosta, province of Trento, Marche, Abruzzo, Molise and Basilicata statistically not very significant data, because it corresponds to a sample size between 20 and 49 units;

(*) The indicator refers to the year of achievement of income (2019) and not to the survey year (2020);

(**) The indicator refers to the year of achievement of income (2020) while the year in which income achievement is previous year (2019).

Social relationships[1]

Family, friendships and, more generally, relational networks are an essential component of individual well-being because they represent a fundamental part of people's social capital. Within these networks, human and material resources are mobilised to provide support and protection both in everyday life and in critical and difficult moments, also making up for the shortcomings of public services.
In 2021, people were most dramatically affected by the lingering effects of the pandemic and many of the indicators considered in this domain, which had remained stable or improved in 2020, worsened.
In the first year of the pandemic, family and friendship networks had confirmed their central and protective role, helping to alleviate the difficulties of a very delicate and unprecedented lockdown phase. In 2021, however, levels of satisfaction with family and, above all, friends relations, while continuing to remain high, declined sharply.
The involvement of the population in social participation and voluntary activities, which had remained stable in the first year of the pandemic, clearly declined in 2021, reaching the lowest values in the time series. The share of the population that declared to have funded associations also decreased, reaching its lowest level ever.
On the other hand, the special situation created by the COVID-19 pandemic has favoured the growth of trust in others and civic and political participation. While trust recorded its highest value since 2010, civic and political participation, despite having clearly increased in the two pandemic years, has still not returned to the levels observed in the period 2011-2014.

Satisfaction with family and friends relations decreased in the second year of the pandemic, especially among younger people

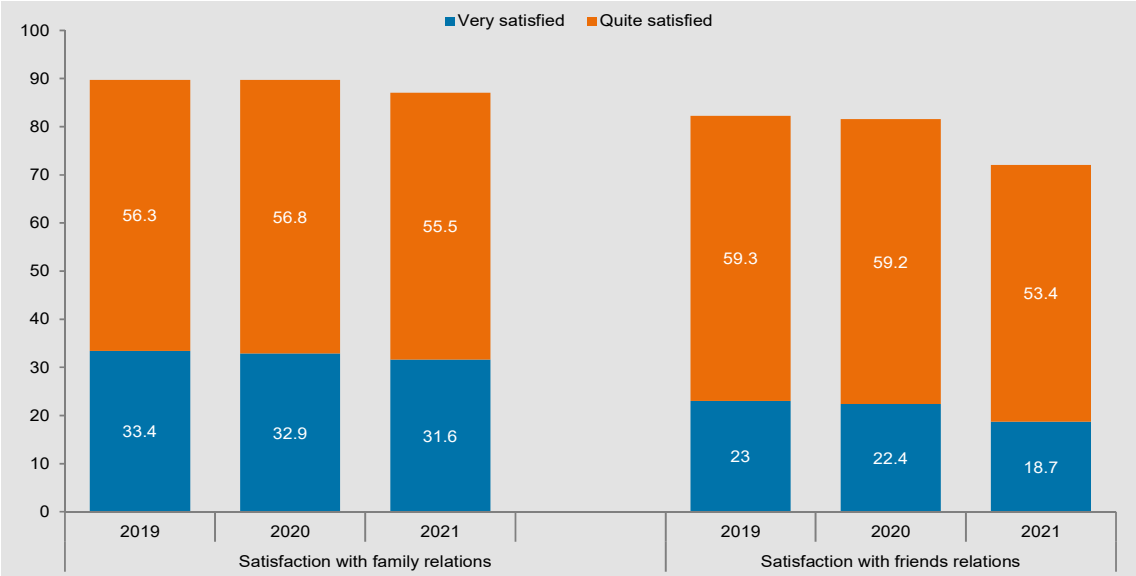
Family, friendships and, more generally, relational networks represent fundamental support for people, an important reference point both in carrying out normal daily activities and to face critical and difficult moments.
In 2021, 31.6% of people aged 14 and over declared to be very satisfied with family relations; if those who declared to be quite satisfied are also taken into account, the overall share of the satisfied population reached 87.1%. The percentage of those who are very satisfied with relations with friends was lower: 18.7% declared to be very satisfied, while if we also consider the share of those who declared to be quite satisfied, it reached 72.1% (Figure 1).
The percentage of the population with non-cohabiting relatives, friends or neighbours they can rely on also continued to be very high (80.4%)[2].

1 This chapter was edited by Miria Savioli, with contributions from: Lorena Di Donatantonio, Romina Fraboni and Massimo Lori.

2 The indicator is calculated by considering the persons who gave at least one positive answer to three separate questions concerning the possibility to rely on relatives or friends or neighbours in case of need. The set of relatives considered does not refer to co-habitants and also excludes non co-habiting parents, children, brothers, sisters, grandparents, grandchildren, because the intention is to capture the existence of less close parental figures, i.e. cousins, aunts, uncles, nieces (children of brothers/sisters), etc., on whom it is nevertheless important to be able to

In 2020, the first year of the pandemic, levels of satisfaction with family and friends relations and the possibility to rely on the help of non-cohabiting relatives, friends or neighbours remained stable. In the face of unexpected and sudden difficulties, families, friends and relational networks had been a lifeline, making a very delicate lockdown phase sustainable[3]. In 2021, one year after the start of the pandemic, there was a deterioration in satisfaction levels, particularly in friends relations.

Figure 1. People aged 14 and over that are satisfied with family and friends relations. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life

Overall, the share of the population that declared to be very or quite satisfied with friends relations decreased by 10.2 percentage points between 2019 and 2021, reaching its lowest value since 1993 (72.1%). In particular, the share of very satisfied people decreased by 4.3 percentage points and that of those who said they were quite satisfied decreased by 5.9 percentage points (Figure 1).

The decrease in satisfaction with friends relations is more marked among young people, but is observed across the whole population. The share of the very satisfied decreased, in fact, by 6.5 percentage points among the 14-19-year-olds and by about 5 percentage points among the population aged 20-44; those aged 65-74 also recorded a decrease of about 5 percentage points (Figure 2).

The decrease in satisfaction with friends was affected by the frequency with which they met. Among 14-24-year-olds, the propensity to be highly satisfied with friends relations[4] is twice as high among those who see friends at least once a week, compared to those who see them less frequently.

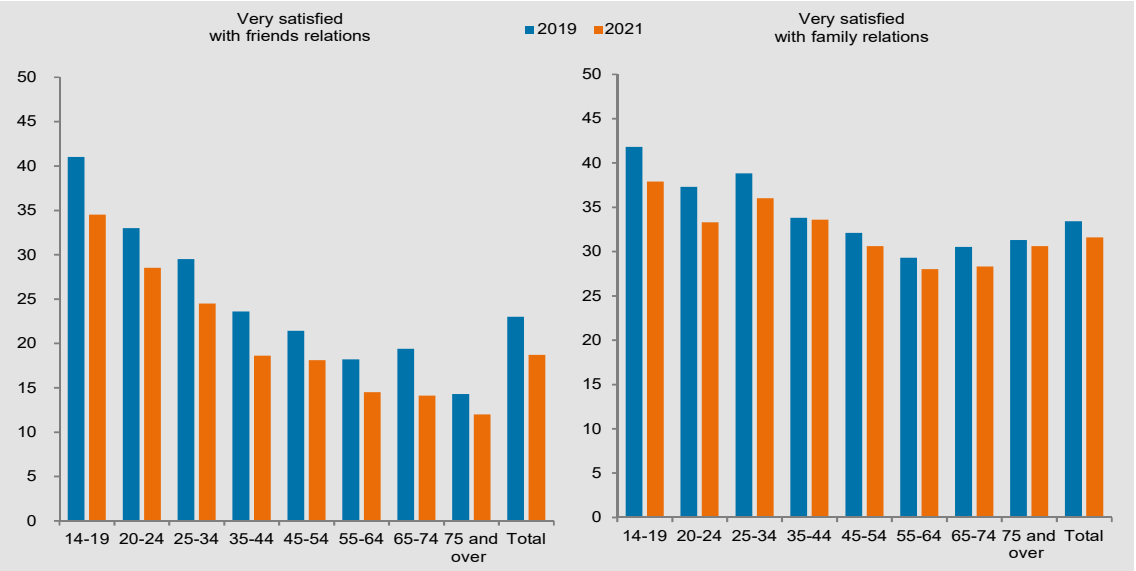
rely on in case of need.

3 Istat, Citizens' reaction to the lockdown. 5-21 April 2020. Phase 1: A country united against COVID-19, https://www.istat.it/it/archivio/243357.

4 In order to assess the association between the propensity to be very satisfied with friends relations and the frequency with which one sees friends (in terms of Odds Ratio), a logistic regression model was applied to adjust for the effect of a number of structural variables, such as age, gender, geographical area of residence, size of the municipality and perceived health.

Between 2019 and 2021, the share of the population aged 14 years and over who said they saw their friends at least once a week fell sharply from 59.9% to 45.3%. Among 14-24-year-olds, the share dropped from 89.8% to 73.8%.
Between 2019 and 2021, the percentage of those who said they were very or quite satisfied with their family relations also fell, although to a lesser extent than for the satisfaction with friends relations (-2.6 percentage points - Figure 1). The decline in the very satisfied is particularly marked in the younger age groups (-4 percentage points in the 14-24 age group), while satisfaction remained stable or showed statistically insignificant changes in the remaining age groups (Figure 2).
The comparison between 2019 and 2021 showed that the share of very satisfied with family and friends relations decreased among both males and females.
In 2021, the prolonged difficulties for parents and children to share home spaces even for working and schooling, the reduced possibilities of attending school/university due to the alternation of face-to-face and distance learning for a good part of the school/academic year, the limitations in the possibility of doing sports and recreational activities have contributed to the worsening of satisfaction with more evident effects among young people.

Figure 2. People aged 14 and over that are very satisfied with family and friends relations by gender and age group. Years 2019 and 2021. Percentages

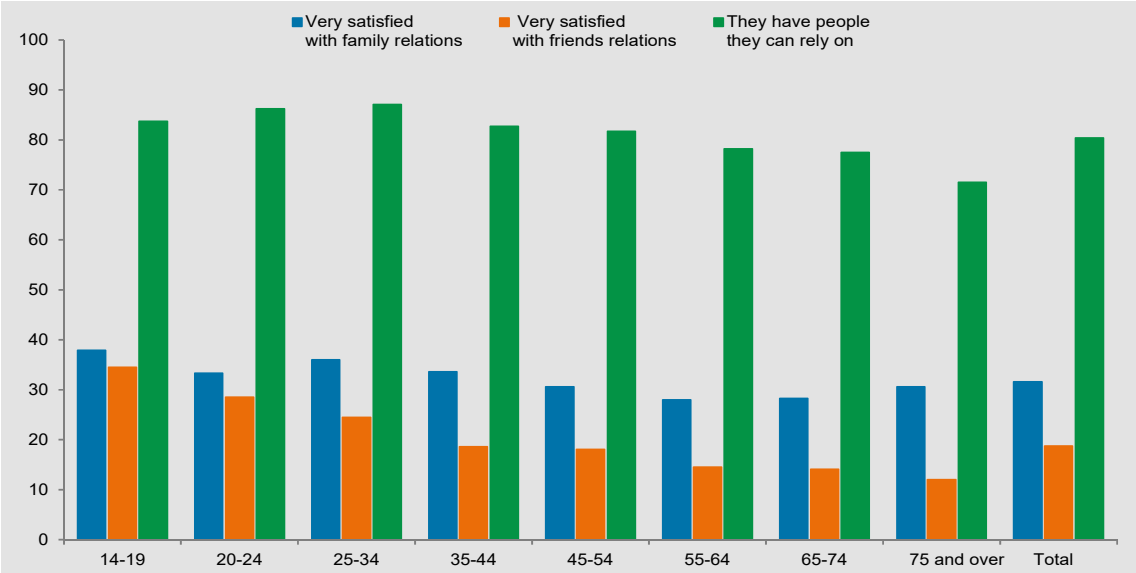


Source: Istat, Survey on Aspects of daily life

Between 2019 and 2021, the decline in satisfaction with family and friends relations was across the whole Country and was strongest in the North-west (-2.4 points for satisfaction with family relations and -5.4 points for satisfaction with friends relations) and in the Centre (-4.9 points for friendships).
In 2021, satisfaction with family relations was expressed in a similar way by males and females; it was highest between the ages of 14 and 34, where the share of very satisfied reached values between 33% and 38%, it declined slightly at later ages, reaching 28% among the 55-74-year-olds, and then rose again in the oldest age group (just over 30% - Figure 3). The lowest levels of satisfaction were found among single people and particularly among single men aged 55-74 (about 18%).

Satisfaction with friends also showed no significant differences between males and females and the degree of satisfaction was higher among 14-19-year-olds (34.5%) who usually have a wider network of friendships. Unlike satisfaction with family relations, satisfaction with the friendship network decreased sharply as age increased and reached its lowest value in the older population (12.0% in people aged 75 and over - Figure 3).

Figure 3. People aged 14 and over that have people they can rely on and people aged 14 and over that are very satisfied with family and friends relations by age group. Year 2021. Percentages



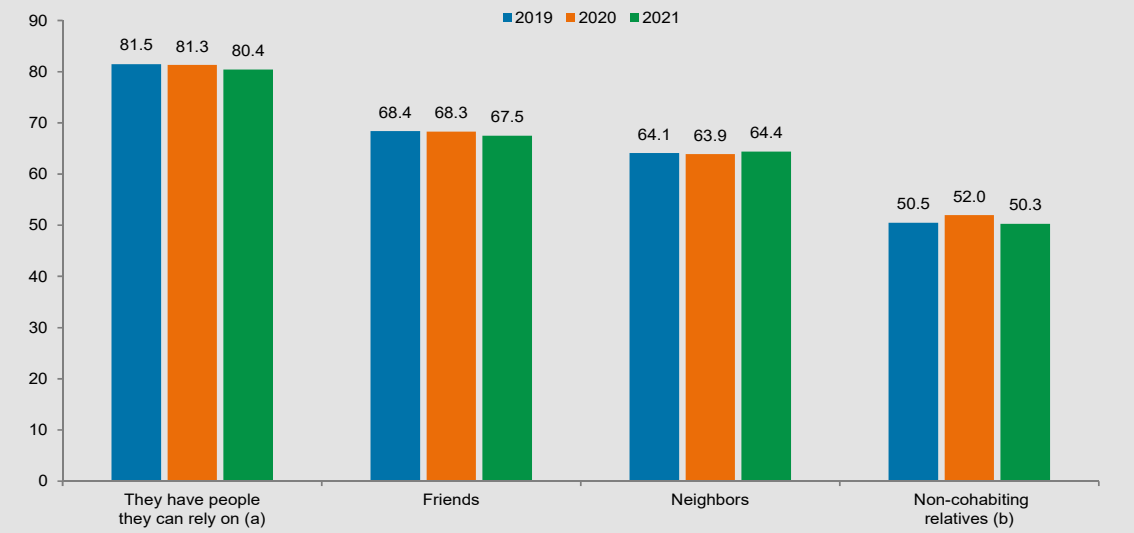
Source: Istat, Survey on Aspects of daily life

In Italy, the network of relationships with non-cohabiting relatives, friends and neighbours continued to play a fundamental role in the provision of support on which individuals and households are accustomed to rely. In 2021, the share of the population that had non-cohabiting relatives, friends or neighbours to rely on, while continuing to remain very high, showed a slight decrease compared to 2019 (from 81.5% to 80.4%). The decrease was found among both males and females, while when looking at age it was more marked in the 14-19 age group (-3.1 percentage points). The decrease was strongest in the southern regions (-3.3 percentage points) while the share remained stable in the Centre-North. Also in the case of 14-19-year-olds, the share decreased especially in the regions of Southern Italy (from 86.1% to 78.3%) while it remained stable in the other regions.

Analysing the individual components of the indicator, it emerges that the possibility to rely on friends decreased (from 68.4% to 67.5%) across the age groups and in particular among 14-19-year-olds where the share fell from 78.4% to 74.8%, while the possibility to rely on neighbours or non-cohabiting relatives remained stable (Figure 4).

Like satisfaction with friends relations, the possibility of counting on an extended support network also followed a decreasing trend with age: it was higher among 14-54-year-olds (more than 81% of whom declared they had non-cohabiting relatives, friends or neighbours they could rely on), then decreased from the age of 55 onwards, reaching its lowest value for people aged 75 and over, among whom, however, the share remained high (71.5%). The differences between age groups were less evident than in the case of satisfaction with the friendship network (Figure 3).

Figure 4. People aged 14 and over that have people they can rely on (non-cohabiting relatives, friends or neighbors). Years 2019, 2020 and 2021. Percentages

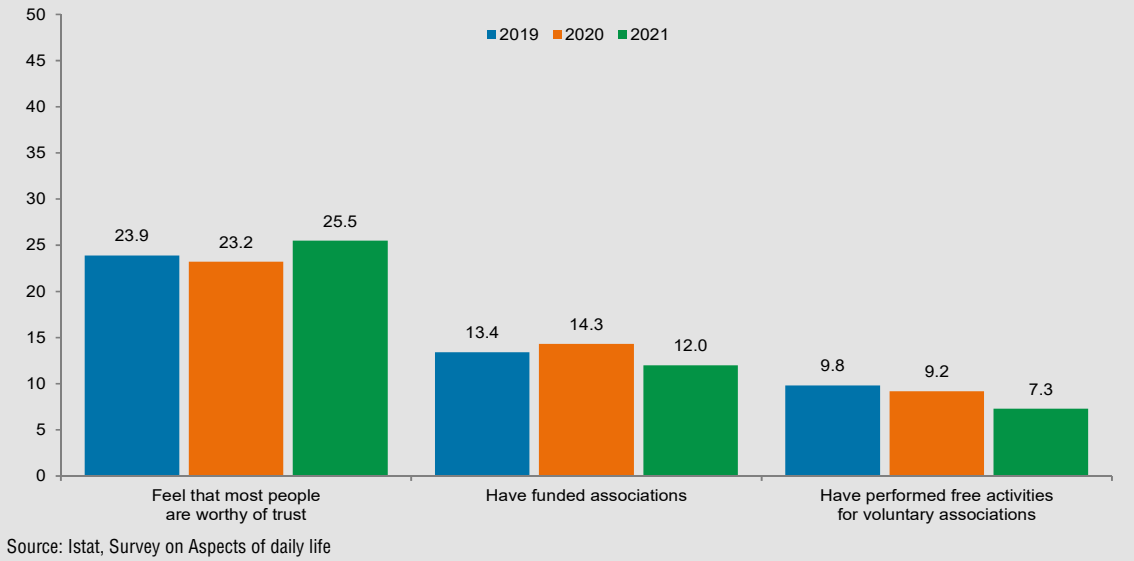


Source: Istat, Survey on Aspects of daily life
(a) They have people they can rely on: at least one type of people including relatives who are not cohabiting and/or friends and/or neighbors.
(b) Relatives who are not cohabiting: uncles, cousins, nephews (children of brothers/sisters).

Decline in voluntary activity, funding for associations and social participation

Voluntary activity, which had remained stable in the first year of the pandemic, declined by 2.5 percentage points in 2021 (from 9.8% in 2019 to 7.3% in 2021 - Figure 5). The decrease affected all geographic areas but was most marked in the North, where levels were highest (from 12.7% to 9.4%); it was also transversal by gender and age although it was most marked among females and among 14-19-year-olds (-4.6 percentage points) and 60-64-year-olds (-3.5 percentage points).
The highest levels of involvement in voluntary activities were found among young people

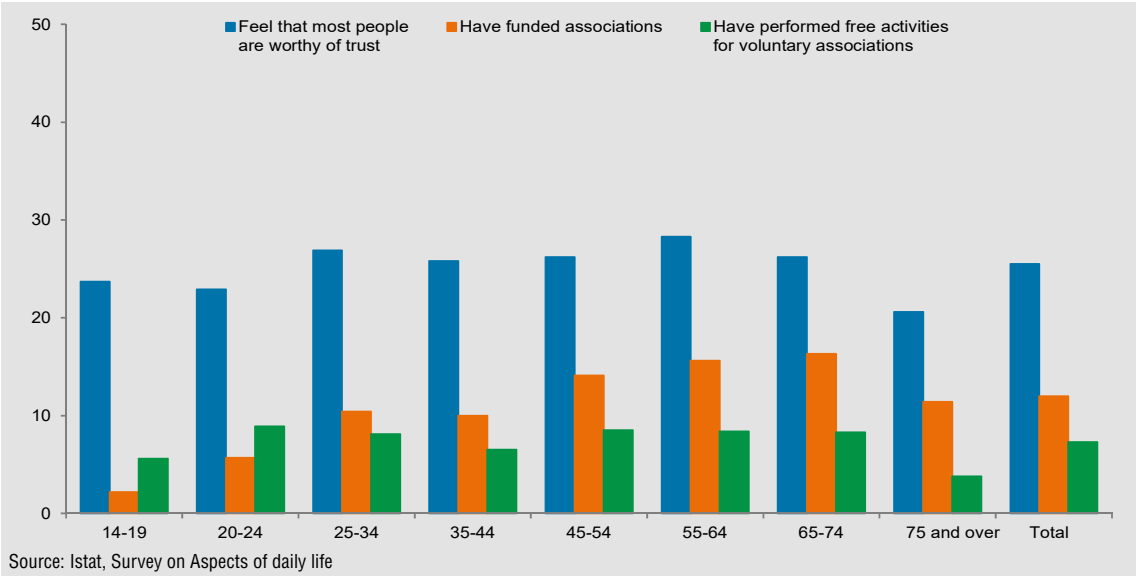
Figure 5. People aged 14 and over that feel that most people are worthy of trust and people aged 14 and over that have funded associations or have performed free activities for voluntary associations in the last 12 months. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life

aged 20-34 and in the 45-74 age group (around 8% - Figure 6). Differences are amplified according to the level of education: 13.2% of university graduates were involved in voluntary activities, more than three times the percentage of those with a lower secondary school degree or less (4.2% - Figure 11).
In 2020, the share of people who declared that they funded associations, after years of stability, increased slightly (14.3% compared to 13.4% in 2019), probably also as a result of the information and awareness-raising campaigns in support of research and medical and health organisations spread during the lockdown. In 2021, the trend reversed and funding for associations decreased by 2.3 percentage points compared to 2020, going down to 12.0%, the lowest value in the entire time series (Figure 5).
Between 2019 and 2020, growth was driven by people living in the North and males. In 2021, these were precisely the population groups in which the greatest decreases were found. The share of those who have made financial contributions to associations, decreased most in the northern regions, where levels were highest (-3.1 percentage points between 2020 and 2021), among males (-2.8 percentage points) and among those aged 35-44 (-5.3 percentage points).
Funding associations, an activity that is not very widespread among young people due to their limited economic autonomy, reached its maximum among 45-74 year-olds (14.0%-16.0%) and among university graduates (24.1% compared to 6.3% of those with a lower secondary school degree or less - Figures 6 and 11).
With regard to the non-profit sector, in 2019, there were 362,634 active non-profit insti-

Figure 6. People aged 14 and over that feel that most people are worthy of trust and people aged 14 and over that have funded associations or have performed free activities for voluntary associations in the last 12 months by age group. Year 2021. Percentages

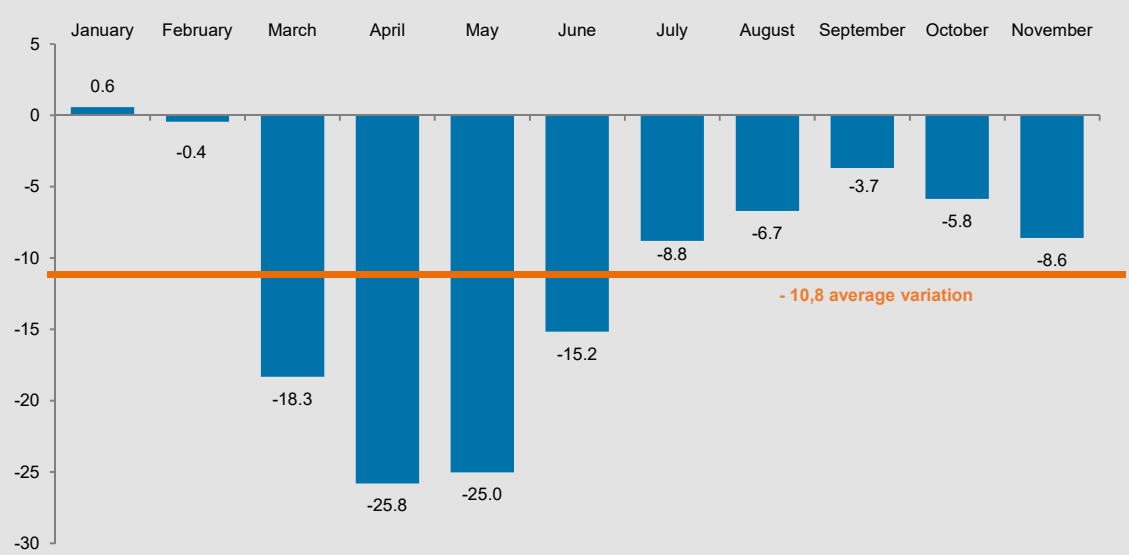


Source: Istat, Survey on Aspects of daily life

tutions in Italy (60.8 per 10,000 inhabitants) which, overall, employed 861,919 people. Between 2018 and 2019, non-profit institutions grew by 0.9%, less than between 2017 and 2018 (+2.6%) while the increase in employees was stable around 1.0% in both years. This confirms the growing trend of this sector recorded in recent years.
Data on the number of non-profit institutions active in Italy in 2020 and 2021 are not yet available, but it is possible to draw an initial picture of the impact of the pandemic on this

sector by analysing data on the days worked by employees of non-profit institutions.
In 2020, the days worked decreased significantly (-10.8% compared to 2019)[5], particularly in March (-18.3%), April (-25.8%) and May (-25.0%) as a result of the government's pandemic containment measures (Figure 7).
In 2021, 14.6% of the population aged 14 and over stated that they were involved in some

Figure 7. Days worked by employees of non-profit institutions by month. Variations in percentage points (Year 2020 on 2019)



Source: Istat, Statistical register of nonprofit institutions

form of social participation taking part to meetings of recreational, cultural, civic and sports associations. As early as 2020, social participation showed a slight decrease, which became more pronounced in the second year of the pandemic (it was 22.7% in 2019).
An analysis of the individual components of the indicator shows that, between 2019 and 2021, participation in the activities of sports (-4.1 percentage points) and recreational and cultural associations (-3.6 percentage points) decreased particularly. Participation in meetings of trade unions, professional or trade associations also decreased.
Between 2019 and 2021, social participation dropped among both males and females and in all age groups; in particular, it fell by about 11 percentage points in the 14-24 age group and by about 7-9 points in the 25-64 age group.
The decrease was all over the Country, although more marked in the North, where involvement was higher.
Social participation was highest among young people aged 14-19, remained constant and just above the average value up to the age of 64 (15%-17%), and then dropped to its lowest value among the population aged 75 and over (4.8%).
Gender differences also emerge in favour of men, 17.1% of whom state to have carried out social participation activities compared with 12.3% of women. Wider gaps emerge when the level of education is considered, since social participation is more widespread among those who have a high educational qualification: 28.3% of university graduates, in fact, carried out social participation activities, compared to 16.3% of high school graduates and 8.1% of those with no more than a lower secondary school diploma (Figure 11).

5 The change is calculated over eleven months, excluding December.

Civic and political participation increased in the two pandemic years

In 2021, 64.9% of the population aged 14 years and over stated that they engaged in indirect civic and political participation activities ("talking about politics", "getting informed", "participating online"). This figure increased comparing to 2020, when it stood at 61.7%, and confirms the growing trend that began in the first year of the pandemic when the need to follow the evolution of the measures put in place to tackle the spread of the COVID-19 pandemic at national and local level had favoured civic and political participation by the population (Figure 8).

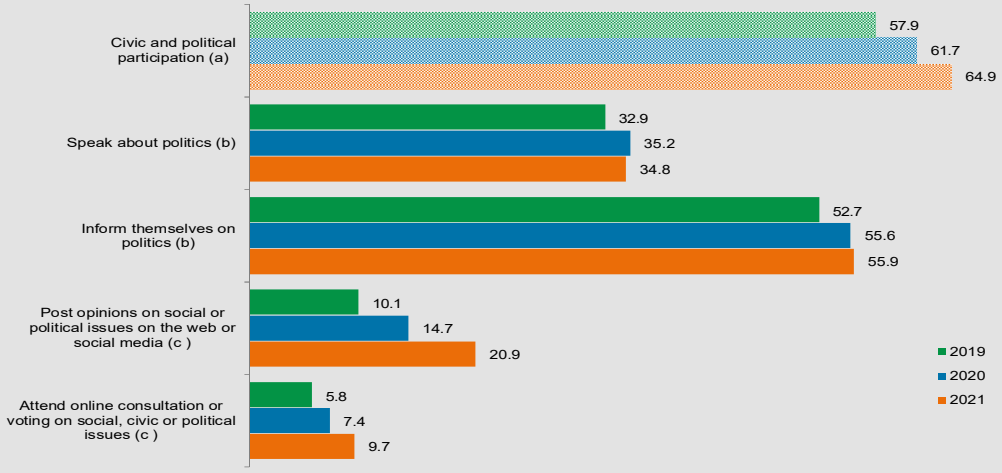
It is therefore interrupteded the negative trend that began in 2014, which in 6 years lead to a decrease by almost 11 percentage points in the share of the population involved, with a growing lack of interest of the population, especially in talking about and being informed about politics.

Over the past year, interest in civic and political topics has increased especially in the regions of the Centre and the South and Islands (5.2 percentage points more in the Centre and 4.7 points more in the South and Islands). In the North, the growth was smaller (+1.5 percentage points), but this territorial unit had already experienced a strong increase in interest in the first year of the pandemic (from 62.5% to 67.9% between 2019 and 2020).

As in 2020, in 2021 interest in civic and political issues grew more among females (+4 percentage points compared to +2.7 percentage points for males) and in the younger age groups (around +7 percentage points in the 20-24 age group and +8.3 points in the 25-34 age group).

In particular, an analysis of the individual components of the indicator shows how, between 2020 and 2021, the share of the population that expressed opinions on social or political issues through websites or social media (e.g. Twitter, Facebook, Instagram, YouTube) and the percentage of those who participate online in consultations or votes on social, civic or political issues increased (respectively +6.2 and +2.3 percentage points), while the share of the population declaring that they spoke and were informed about politics remained stable (Figure 8).

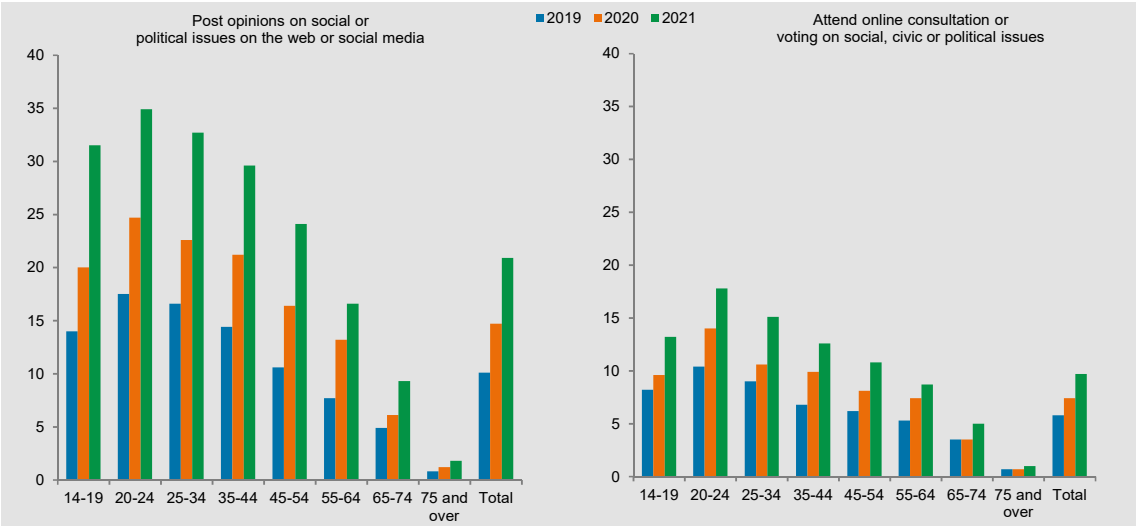
Figure 8. People aged 14 and over who perform activities of civic and political participation. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life
(a) They performed at least one of the following activities: speak about politics, be informed about politics, post opinions on social or political issues through websites or social media (for example Twitter, Facebook, Instagram, YouTube), attend online consultation or votes on social, civic or political issues (e.g. urban planning, signing a petition, etc.).
(b) At least once a week.
(c) In the 3 months before the interview.

Expressing opinions on social or political issues on the web increased most among 14-34-year-olds (up about 10 percentage points) and among the population aged 35-54 (up about 8 percentage points), while the increase was very limited among the 55-74-year-olds and nil among those aged 75 and over.
Even for online participation in consultations or voting, the greatest growth was recorded among young people and particularly among those aged 14-34 (Figure 9).
Civic and political participation, which increased with age, peaked in the 55-64 age group

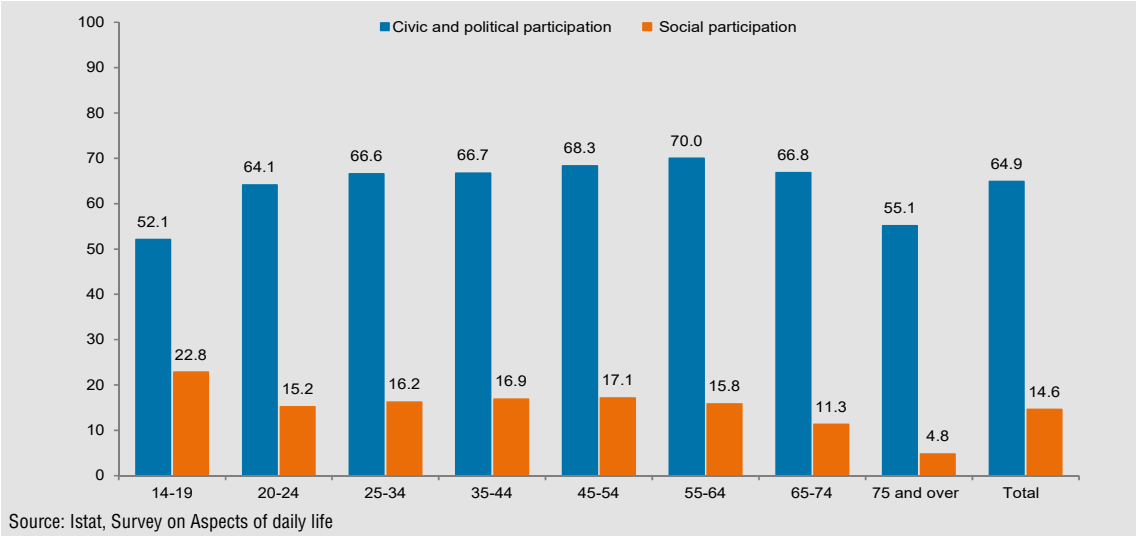
Figure 9. People aged 14 and over for activities of civic and political participation carried out by age group. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life

(70.0%), then declined to 55.1% among those aged 75 and over, although the elderly remained above the level recorded among the youngest (52.1% in the 14-19 age group - Figure 10).
As with social participation, strong gender differences emerged for civic and political participation, in favour of men. In this case, however, the gap was greater (10.5 percentage

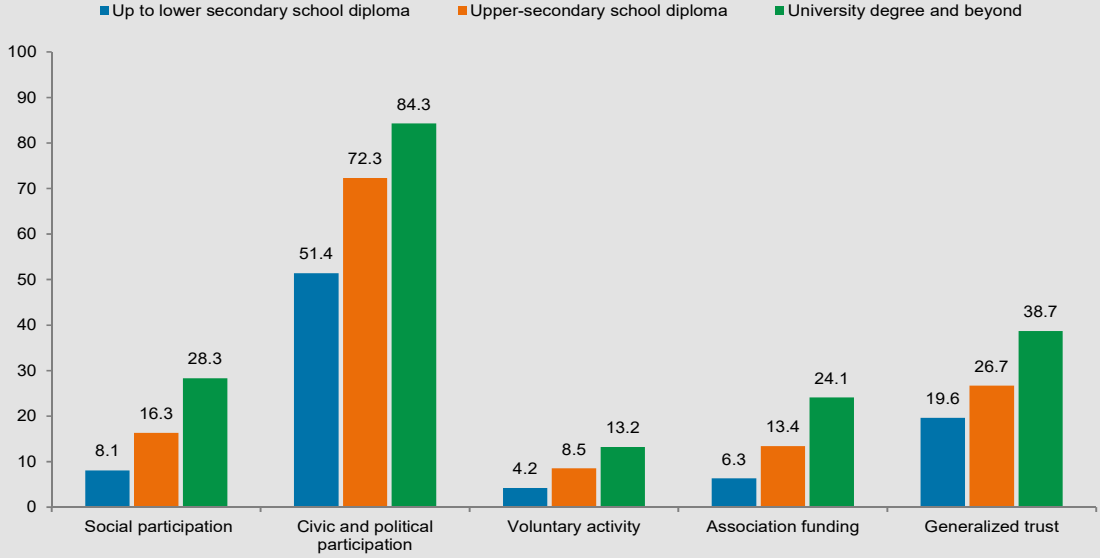
Figure 10. People aged 14 and over who perform activities of social, civic and political participation by age group. Year 2021. Percentages



Source: Istat, Survey on Aspects of daily life

points higher for men in 2021). The gender gap was zero among 14-24-year-olds, remained 5-11 percentage points in favour of men in the 25-64 age group and exceeded 17 percentage points in the population aged 65 and over.
Even wider gaps emerged by level of education: 84.3% of university graduates engaged in civic and political participation, compared to 72.3% of upper and post-secondary graduates and 51.4% of those with no more than a lower secondary school diploma (Figure 11).

Figure 11. Social relationships domain indicators by educational level. Year 2021. Percentages



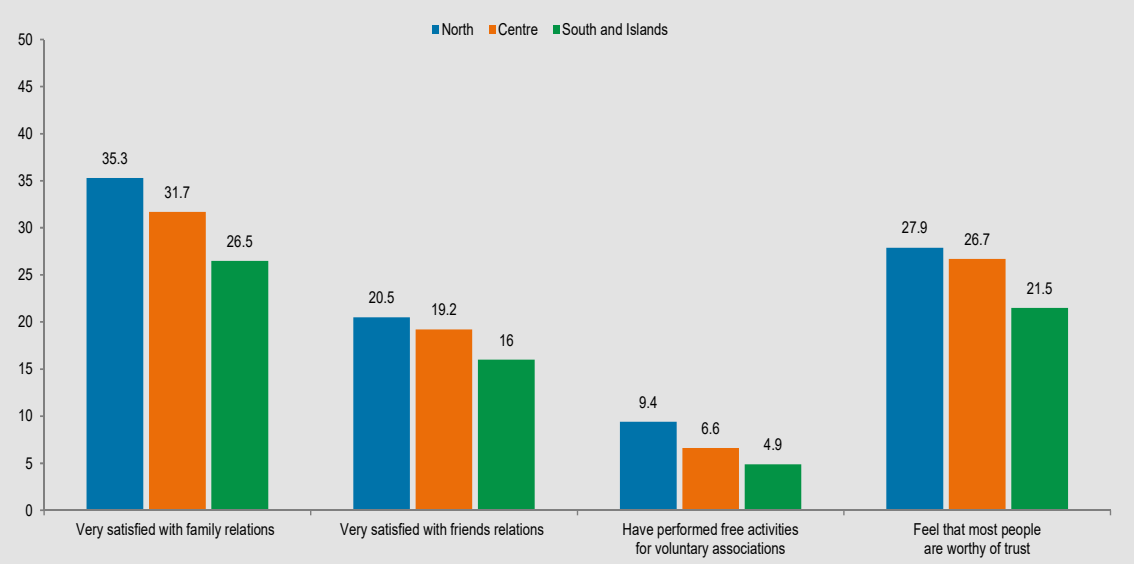
Source: Istat, Survey on Aspects of daily life

Generalized trust increased, but the level remained low

One of the main indicators of social cohesion and civic sense in a community is "generalised trust", that is the degree to which people trust their fellow citizens. Where mutual trust is high, societies function better, are more productive, more cooperative, more cohesive, opportunistic behaviour are less widespread and the level of bribery is lower.
If in Italy the levels of satisfaction with family and friends relations are very high, the same is not true for the trust that people place in their fellow citizens. It emerges a profound distrust by the population that does not feel safe and secure enough outside family and friends relations.
In fact, trust in others continued to remain very low, although it had risen slightly since 2019.
After the growth seen in 2018-2019 and the stability seen in the first year of the pandemic, generalized trust was on the rise again in 2021. In fact, the share of people aged 14 and over who believe that most people are trustworthy reached 25.5% (+2.3 percentage points compared to 2020 - Figure 5). This is the highest value in the last decade and confirms the growing trend that started in 2018.
Over the past year, trust in others grew above all in the regions of the North-west (+2.8 percentage points) and the Centre (+2.9 percentage points); it increased among both men and women and across age groups, even if the growth was more marked among 25-34-year-olds (+3.4 percentage points) and the 65-74 population (+3.9 percentage points).

The share of those who express trust in others was higher among men (26.9% vs. 24.2%), increased with age up to 64 (28.6% among those aged 55-64), and then decreased to 20.6% among those aged 75 and over. Gender differences, which are non-existent in the middle age group, emerged both among young people under 34 and among those aged 65 and over: in both cases, women expressed less trust in others than males of the same age.

Figure 12. People aged 14 and over that are very satisfied with family and friends relations, that feel that most people are worthy of trust, that have have performed free activities for voluntary associations in the last 12 months by geographic area. Year 2021. Percentages



Source: Istat, Survey on Aspects of daily life

The disadvantage of the South and Islands persists

In the South and Islands, all forms of social networks appeared less strong than in the rest of the Country.

Satisfaction with family relations in the North reached 35.3%, while in the South and Islands it stopped at 26.5% (8.8 percentage points less). The gap was smaller for friends relations, however also in this case, the share of those very satisfied was 20.5% in the North while it dropped to 16.0% in the South and Islands (Figure 12).

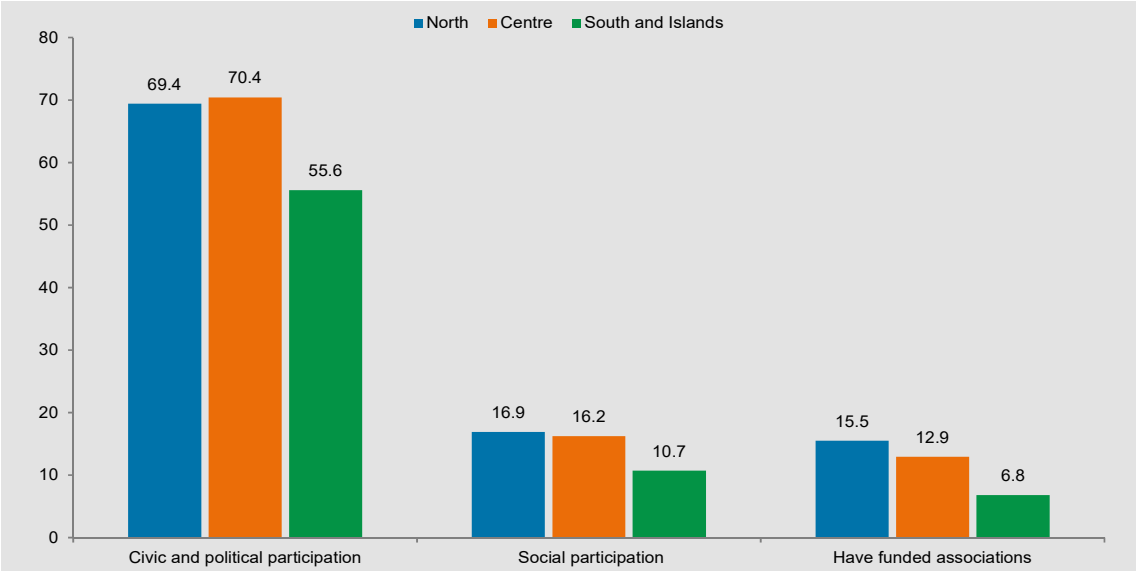
It was only in the case of the potential network of help that the territorial differences narrowed, almost to the point of disappearing: the possibility of relying on non-cohabiting relatives, friends and neighbours in case of need was, in fact, equally widespread throughout the territory, with a slight prevalence in the Centre-North (about 81% compared to 78.6% in the South and Islands).

The trust that people place in others also reached its lowest levels in the South and Islands, where 21.5% of the population aged 14 and over replied that most people are trustworthy, while in the North the level, while still low, is close to 28% (Figure 12).

The disadvantage of the South and Islands with respect to the rest of the Country also persisted with regard to "extended social networks", such as associationism and voluntary work: in the North, the share of the population that contributed to the financing of associ-

ations is more than double that in the South (15.5% compared to 6.8%) and for voluntary activity the North showed almost double the involvement compared to the South and Islands (9.4% compared to 4.9% - Figures 12 and 13).
As far as the non-profit sector is concerned, regional differences also remained substantial: the number of institutions per 10,000 inhabitants was much higher in the regions of the North-east (70.7), the Centre (68.1) and the North-west (63.0) than in the regions of the South (47.2) and the Islands (52.4).

Figure 13. People aged 14 and over who who perform activities of social, civic and political participation and that have funded associations in the last 12 months by geographic area. Year 2021. Percentages



Source: Istat, Survey on Aspects of daily life

Territorial differences were also confirmed for social, civic and political participation. In the Centre-North, about 16% of the population aged 14 and over stated that they carried out social participation activities, whereas in the South and Islands the share dropped to 10.7%.
In the case of civic and political participation, for which the levels of participation were higher, the territorial gap comes close to 14 percentage points: about 70% in the Centre-North compared to 55.6% in the South and Islands (Figure 13).

Indicators

1. **Satisfaction with family relations:** Percentage of people aged 14 and over that are very satisfied with family relations on total population aged 14 and over.

   Source: Istat - Survey on Aspects of daily life

2. **Satisfaction with friends relations:** Percentage of people aged 14 and over that are very satisfied with relations with friends on total population aged 14 and over.

   Source: Istat - Survey on Aspects of daily life

3. **People to rely on:** Percentage of people aged 14 and over that have non cohabiting relatives (besides parents, sons, siblings, grandparents, nephews), friends or neighbors they can rely on, on total population aged 14 and over.

   Source: Istat - Survey on Aspects of daily life

4. **Social participation:** People aged 14 and over that have performed at least one social participation activity in the last 12 months on total population aged 14 and over. The activities in question are: participation in meetings of associations (cultural/recreational, ecological, civil rights, peace); participation in meetings of trade union organizations, professional or trade associations; meetings of political parties and/or performance of free activities for a party; payment of a monthly or quarterly fee for a sports club.

   Source: Istat - Survey on Aspects of daily life

5. **Civic and political participation:** People aged 14 and over who perform at least one of the activities of civic and political participation on total population aged 14 and over. The activities in question are: The activities in question are: to speak about politics at least once a week; to inform of the facts of Italian politics at least once a week; to attend online consultation or voting on social issues (civic) or political (e.g. urban planning, sign a petition) at least once in the 3 months prior to the interview, to read and to post opinions on social or political issues on websites or social media at least once in the 3 months preceding the interview.

   Source: Istat - Survey on Aspects of daily life

6. **Voluntary activity:** Percentage of people aged 14 and over that have performed free activities for voluntary associations or groups in the last 12 months on total population aged 14 and over.

   Source: Istat - Survey on Aspects of daily life

7. **Association funding:** Percentage of people aged 14 and over that have funded associations in the last 12 months on total population aged 14 and over.

   Source: Istat - Survey on Aspects of daily life

8. **Nonprofit organizations:** Number of no-profit organizations per 10,000 inhabitants.

   Source : Istat - Statistical register and Census of nonprofit institutions

9. **Generalized trust:** Percentage of people aged 14 and over that feel that most people are worthy of trust on the total population aged 14 and over.

   Source : Istat - Survey on Aspects of daily life

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Satisfaction with family relations (a)	Satisfaction with friends relations (a)	People to rely on (a)	Social participation (a)
	2021	2021	2021	2021
Piemonte	33.0	19.3	80.7	15.0
Valle d'Aosta/Vallée d'Aoste	32.6	20.9	86.9	15.0
Liguria	37.7	21.7	85.7	15.7
Lombardia	35.2	19.4	80.7	16.0
Trentino-Alto Adige/Südtirol	41.0	25.3	82.0	24.1
Bolzano/Bozen	*42.2*	*25.6*	*81.7*	*27.4*
Trento	*39.7*	*25.1*	*82.3*	*20.9*
Veneto	34.3	20.4	81.9	17.8
Friuli-Venezia Giulia	38.9	22.4	80.8	17.0
Emilia-Romagna	35.7	22.1	81.5	18.4
Toscana	33.8	20.6	80.5	16.4
Umbria	34.8	19.9	81.9	18.5
Marche	32.8	19.7	81.7	14.4
Lazio	29.6	18.0	81.6	16.1
Abruzzo	31.7	17.4	82.9	15.0
Molise	26.5	17.0	80.5	10.1
Campania	26.0	16.7	78.5	9.2
Puglia	21.5	12.9	78.4	11.9
Basilicata	29.3	16.1	72.8	11.8
Calabria	26.0	16.4	81.0	9.3
Sicilia	28.5	15.8	75.5	10.0
Sardegna	29.6	19.6	84.1	13.6
North	35.3	20.5	81.4	16.9
North-west	34.8	19.6	81.2	15.7
North-east	35.9	21.7	81.6	18.5
Centre	31.7	19.2	81.3	16.2
South and Islands	26.5	16.0	78.6	10.7
South	25.4	15.6	79.0	10.7
Islands	28.8	16.8	77.7	10.9
Italy	**31.6**	**18.7**	**80.4**	**14.6**

(a) Per 100 persons aged 14 and over;
(b) Per 10,000 inhabitants.

Civic and political participation (a)	Voluntary activity (a)	Association funding (a)	Nonprofit organizations (b)	Generalized trust (a)
2021	2021	2021	2019	2021
65.8	7.7	13.0	69.5	27.5
69.1	8.9	12.5	112.5	33.3
69.9	7.8	14.2	72.9	25.2
70.0	9.4	15.9	58.0	28.0
70.3	15.1	21.9	113.8	38.4
68.3	*13.0*	*21.6*	*108.3*	*39.6*
72.2	*17.2*	*22.2*	*119.2*	*37.3*
68.8	10.7	15.0	63.7	26.4
69.9	10.7	15.3	90.8	29.2
72.1	8.8	16.4	62.5	27.9
71.3	7.9	16.0	76.2	26.2
69.1	7.1	13.8	81.8	22.6
67.7	5.3	13.0	76.3	24.2
70.7	6.1	10.8	58.7	28.3
67.5	5.2	11.1	64.1	25.6
57.0	3.9	7.3	68.3	20.8
56.0	4.8	5.6	37.5	24.5
55.7	5.1	7.8	47.8	20.1
51.0	5.2	7.5	67.8	23.8
49.1	5.0	6.3	54.3	23.7
50.7	4.1	4.7	46.3	16.1
68.3	7.1	11.3	70.8	24.7
69.4	9.4	15.5	66.2	27.9
68.8	8.8	14.9	63.0	27.6
70.3	10.4	16.2	70.7	28.3
70.4	6.6	12.9	68.1	26.7
55.6	4.9	6.8	48.9	21.5
55.9	4.9	7.0	47.2	23.1
55.1	4.8	6.4	52.4	18.2
64.9	**7.3**	**12.0**	**60.7**	**25.5**

6. Politics and institutions[1]

The domain assesses the main components of social capital relating to the political and institutional spheres.
The indicators updated to 2021 documented the slow and at times uncertain improvement in all the areas considered, which nevertheless remained characterised by major criticalities, on which the pandemic crisis had different effects.
A low level of trust in politics and democratic institutions emerged: throughout the last decade, the average rating for political parties, Parliament and the judicial system remained well below sufficiency. Slight progress was observed in 2018-2019, which also continued in the two years of the COVID-19 emergency but did not substantially change the picture described.
Italy continued to make very slow progress in the direction of gender balance, but there are still too few women in decision-making bodies and at the top of institutions, both in absolute terms and in comparison with other European countries. This disparity is added to the severe penalisation women have suffered from the impact of the economic and social crisis triggered by the COVID-19 emergency. The positive trend toward greater gender balance in politics and institutions in Italy has also come to a halt in the last two years.
The low level of trust of Italian citizens concerns the institutions of political representation as well as one of the main guarantee institutions, namely the judicial system; this last fact should be read together with the excessive length of civil proceedings which in Italy is still much longer than in most European countries.
The situation in the country's penal institutions is also a structural problem, so serious that it has repeatedly attracted the attention and warnings of the European institutions since adequate detention conditions are essential for the protection of the health and well-being of prison population and prison staff, as well as for social reintegration and prevention of the radicalisation of crime. The spread of the COVID-19 pandemic, therefore, has impacted on a prison system that was already under great pressure, and the measures taken in the first phase of the emergency to reduce prisons crowding have mitigated this situation to a partial extent and with short-lived effects.

In the second year of the pandemic, trust in institutions continued to be very low

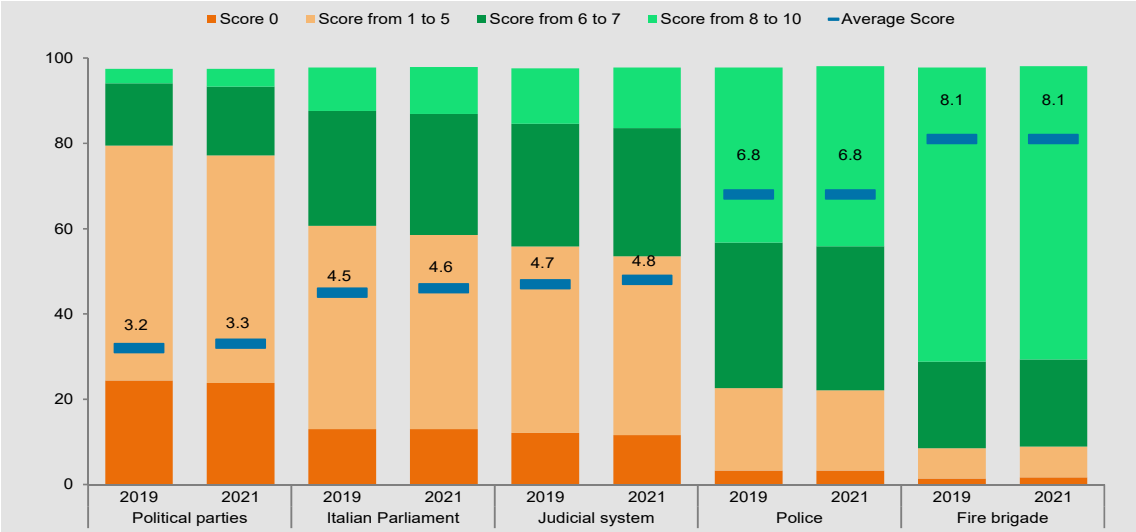
The degree of trust expressed by citizens aged 14 and over towards institutions of constitutional prominence remained insufficient in 2021, although it has improved slightly over the last three years.
The average rating was the lowest ever for political parties, which scored 3.3 on a scale of 0 to 10, and received an insufficient rating from four out of five citizens; the result was relatively better for the Italian Parliament - with an average of 4.6 and about two out of five citizens giving at least a sufficient rating - and for the judicial system, with an average rating of 4.8 and 44.3% of votes between 6 and 10.
After the appreciable increase in 2019, in 2020 and 2021 the three indicators show further, but rather limited, improvements: both the shares of citizens assigning at least a sufficient

1 This chapter was edited by Stefania Taralli, with contributions from: Miria Savioli, Lorena Di Donatantonio and Franco Turetta.

rating to political parties (it was 18.0% in 2019, it is 20.3% in 2021) and to the Italian Parliament (from 37.1% to 39.4%) grew by more than 2 percentage points; the share of votes equal or greater than 6 assigned to the judicial system increased by 2.5 percentage points (Figure 1).

The police and fire brigade - the two services that safeguard social order and citizens' safety - remained substantially stable in 2021, confirming traditionally higher levels, with an average mark of 6.8 for the former and 8.1 for the latter, and a score of 6 or higher assigned by the broad majority of citizens (76.0% in the case of the police and 89.2% for the fire brigade).

Figure 1. People aged 14 and over by score on trust in different institutions. Years 2019 and 2021 (a). Percentages and average score in tenths



Source: Istat, Survey on Aspects of daily life
(a) The sum of the percentages does not reach 100 because a share of respondents did not indicate their opinion on trust in institutions.

The percentage of citizens assigning at least a score of 6 to political parties, the Italian Parliament and the judicial system is higher in the South and Islands, where, moreover, between 2019 and 2021 it grew more than in average for Italy. The difference between the South and the North in 2021 was 3 percentage points for the share of votes equal or greater than 6 assigned to Parliament (40.8% and 37.9% respectively) and 5 points for trust in the judicial system (47.5%; 42.3%).

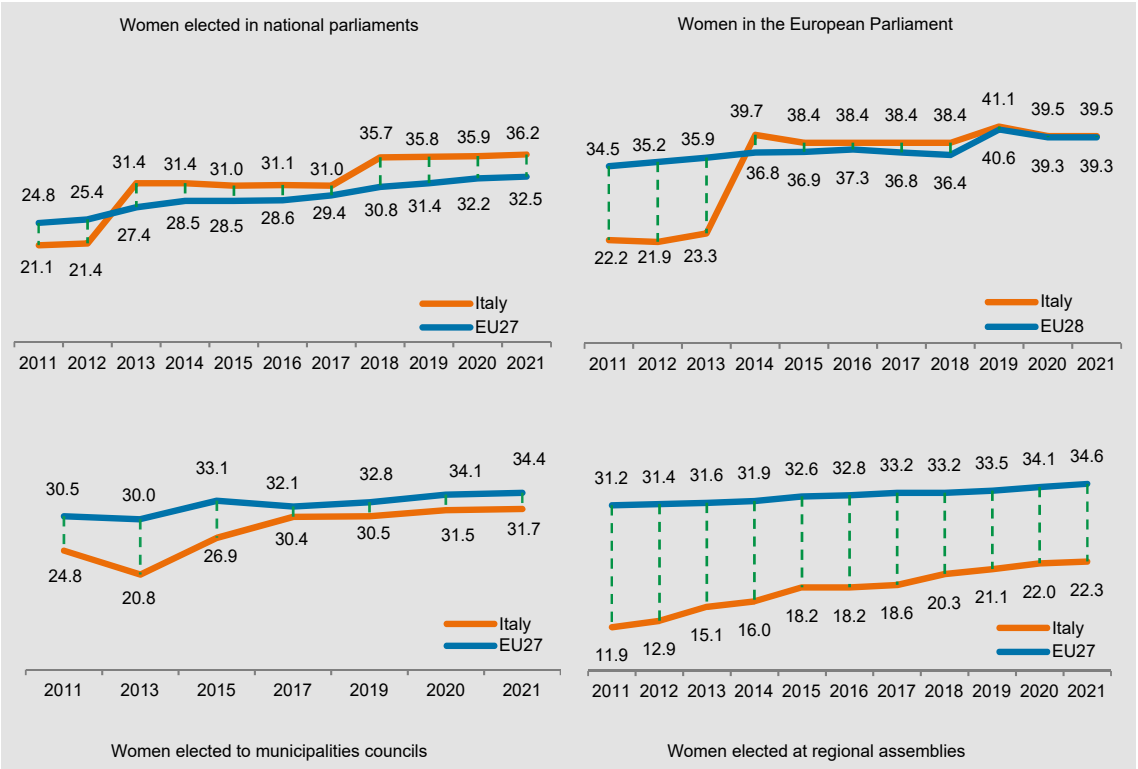
In general, at the national level, the share of sufficient ratings for the latter two institutions has grown especially among women (+3.2 and +2.9 percentage points) and remains higher among the better educated. In 2021, 44.8% of citizens with a high educational qualification expressed this rating with regard to the Parliament (6 percentage points higher than in 2019) compared to 38.5% of those with at most a lower-secondary school qualification and 38.0% of those with at most an upper secondary school qualification; with regard to the judicial system, the share was 48.9% among the most educated and fell to just over 43.0% in the other cases.

On the other hand, trust in political parties has increased more and is higher among people with a low educational qualification and among younger people. In 2021, 21.9% of people with a low educational qualification expressed this orientation compared to around 19.0% of those with a medium or high educational qualification, and 23.2% of people in the 14-34 age group (19.3% among people aged over 54).

Slow progress towards gender equality in politics and top positions

Gender equality is a key principle of the European pillar of social rights, reaffirmed by the European Commission's strategy for the five-year period 2020-2025[2]. In the pre-pandemic years, Italy moved towards this goal at an increasingly slow pace, while since 2020 the impact of the economic and social crisis triggered by the health emergency has resulted in serious setbacks for women in many important areas, from work to health.
The presence of women in positions of political representation is still vastly insufficient. The gender gap is still very wide, but Italy's profile is no worse than the average of the EU countries (Figure 2).
In 2021, Italy's representation of women in the European Parliament (39.5%) remained in line with the average of the 27 countries, and that in the national Parliament (36.2%) remained higher (+3.7 percentage points); the share of women elected to municipal councils (31.7%) was slightly lower (-2.7 percentage points).
In this latter regard, however, it should be noted that less than one Italian municipality in six has a female mayor, and that among the 133 largest municipal administrations (with at least 50,000 inhabitants) there are currently only five women in the same position[3].

Figure 2. Women elected in National Parliaments, European Parliament, Municipalities councils and Regional Assemblies in Italy and the Eu27. Years 2011-2021. Percentages

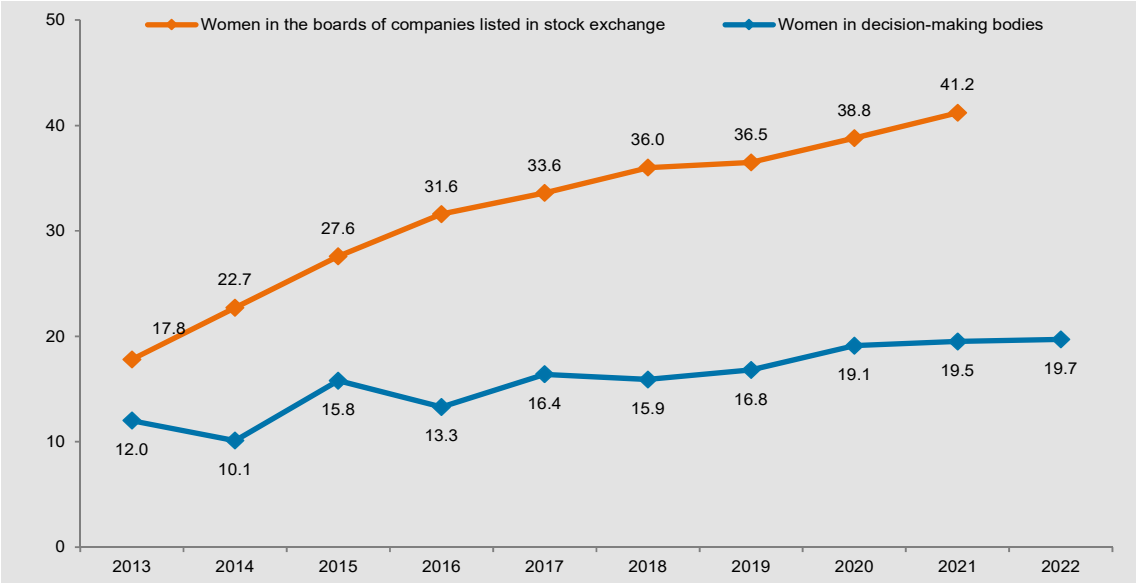


Source: European Commissioner for Justice, Consumers and Gender Equality and Istat, Processing on Chamber of Deputies, Senate and regional assemblies' data

2 See: https://eur-lex.europa.eu/legal-content/IT/TXT/PDF/?uri=CELEX:52020DC0152&from=EN
3 Source: opendata of the Ministry of the Interior, Department for Internal and Territorial Affairs. Data updated to 9 February 2022.

The trends described by the data, as is well known, are also due to the measures taken over the years to mitigate the gender gap in political representation and top management[4].
It is especially in regional politics that the presence of women still struggles to establish itself.
The elections for the renewal of the Calabria Regional Council - the first to be held in that region with the double-gender preference voting mechanism and with "gender quotas" in the electoral lists[5] - saw a doubling of the percentage of elected women councillors, from 9.7% to 19.4%, a value that is still very low.
These were the only regional elections held in Italy in 2021; the progress made in Calabria, therefore, did not substantially change the national picture and even in the last year Italy, with 22.3% of women elected out of the total, remained more than 12 percentage points behind the European average (34.6%).
Moreover, there is only one woman among the 20 Presidents of Region currently in office[6].
On the other hand, the positive effects of the gender gap laws are particularly evident with regard to the presence of women in the boards of companies listed in stock exchange,

Figure 3. Women in the boards of companies listed in stock exchange and in decision-making bodies (a)**. Years 2013-2022. Percentages**



Source: Istat - Processing of data from Italian Embassies abroad, Constitutional Court, Magistrates' Governing Council and some Independent Administrative Authorities
(a) Bodies considered are: Italian embassies abroad, Constitutional court, Magistrates' Governing Council (including magistrates who participate in the functioning of the Body), and some Independent Administrative Authorities (for Communications, Antitrust, Data protection, Consob - Italian Securities and Investments Board).

4 The following have contributed: Law 215/2012 for the rebalancing of gender representation in the councils and boards of local authorities and in regional councils and on equal opportunities in the composition of competition commissions in public administrations; Presidential Decree No. 251 of 2012 on equal access to administrative and control bodies in companies controlled by public administrations; Law 65/2014 on elections to the European Parliament and Law 56/2014 for local governments and subsequent additions such as Law 20/2016 and Decree-Law 86/2020.

5 Regional Law No. 4/2010 of the Region of Calabria amended the previous Regional Electoral Law (No. 1/2005 and subsequent amendments and additions) by introducing the obligation, under penalty of inadmissibility of electoral lists, to have at least 40% of candidates of different gender and the possibility for the voter to express two preferences for councillor candidates within the chosen list as long as they correspond to candidates of different gender, under penalty of the annulment of only the second preference.

6 Source: opendata of the Ministry of the Interior, Department for Internal and Territorial Affairs. Data updated to 9 February 2022.

which, as a result of the most recent measures, exceeded 40.0% in 2021[7], almost 10 percentage points higher than the average of the 27 EU countries (30.6%).
The picture is more critical, however, looking at the positions of top institutional representation, an area in which no equalisation mechanisms operate. Considering all the top positions held by women at the Constitutional Court, the Magistrates' Governing Council,Independent Administrative Authorities (for Communications, Antitrust, Data protection, Consob - Italian Securities and Investments Board), and the Italian Embassies abroad, women failed to reach 20.0% even in 2022. Again, the moderately increasing trend observed since 2012 seems to have come to a halt in the last year (Figure 3).

Civil trial times still too long

With regard to the administration of civil justice, the pandemic crisis impacted a context that had long been affected by severe criticalities, a repeatedly underlined by the European Commission itself, which also in its specific recommendations for Italy for 2020[8] has invited Italy to take action to significantly increase the efficiency of the system. Improving the efficiency of the national judicial systems continues to be a priority of the European Semester; the target set in the Italian National Recovery and Resilience Plan, and pursued with the recent Italian law to reform the civil process[9], is to reduce by more than 40% by 2026 the average disposition time[10].
Between 2012 and 2021, the average effective length of civil proceedings was reduced, but insufficiently: for the proceedings that were clarified during the last year, an average of 14 months elapsed from the start of the trial to the sentencing, 2 months less than in 2012.
During the Covid-19 emergency, the organisational and technological innovations that had already been introduced a few years ago, and which see Italy leading the European ranking of ICT use in judiciary[11], made it possible to keep the courts in operation and not fall back on the path of efficiency, thanks mainly to the strengthening of remote court activities and the telematic process[12].
The initial impact, with the general postponement of hearings in the first half of 2020, slowed down the disposition of pending cases and produced an increase in backlogs. The growth recorded by the monitoring of civil justice in the area of litigation, labour, family and voluntary jurisdiction (SICID) at the end of the third quarter of 2020 was +1.3%; however,

7 The 2020 Budget Law (No. 160/2019) amended the Golfo-Mosca Law (No. 120/2011) by increasing the female quota in the boards of companies listed in stock exchange to at least 40% and by increasing the maximum number of consecutive mandates from three to six.

8 Note 8.6.2020 Council Recommendation on Italy's 2020 National Reform Programme and delivering a Council opinion on Italy's 2020 Stability Programme.

9 Law No. 206 of 26 November 2021, "Delegation to the Government for the efficiency of the civil process and for the revision of the discipline of alternative dispute resolution instruments and urgent measures for the rationalisation of proceedings in the area of personal and family rights as well as in the area of forced execution" is one of the binding reforms for the National Recovery and Resilience Plan (NRRP).

10 The "disposition time" indicator is the standard measure used for international comparisons by CEPEJ - European Commission for the Efficiency of Justice. It represents an approximation of the actual duration, as it estimates the minimum number of days needed to settle a case, calculating it as the ratio between the number of cases still pending at the end of the year and the number of cases settled during the year, multiplied by 365 (days) (see https://www.coe.int/en/web/cepej/).

11 See: "The use of the information technologies in European courts". *CEPEJ Studies,* No. 24.

12 See the various rules and measures on the website of the Ministry of Justice https://www.giustizia.it/giustizia/it/mg_1_8.page?facetNode_1=0_62&selectedNode=4_10.

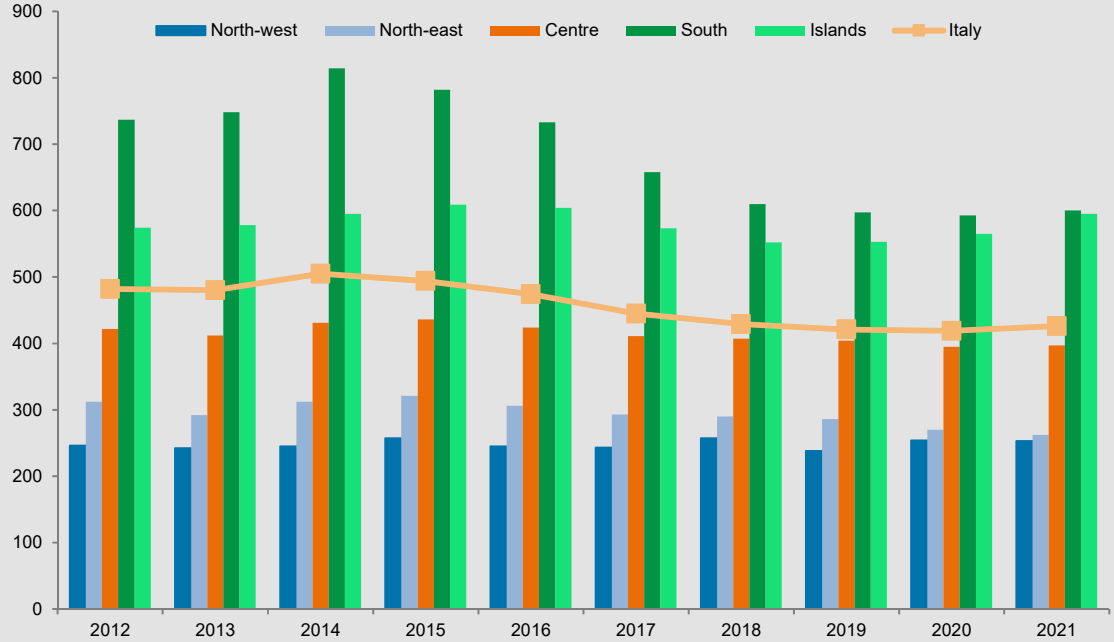
the figure had already largely recovered by the end of that year. Despite the initial difficulties, therefore, the constant downward trend over the last ten years in the number of pending cases has not been interrupted: 2020 closed with -0.7% compared to 2019, and for the third quarter of 2021, a further significant disposal of the backlogs (-4.9%) existing at the end of the previous year was estimated.

The average effective duration of proceedings, i.e. the time that it is usually necessary to wait from the date of start to the date of clearance, did not decrease to the same extent: for the proceedings finalised in 2019 it was 421 days; it decreased to 419 in 2020 (-0.5%) and rose again to 426 in 2021 (+1.7%). The levels of the indicator also reflect the clearance rates of the over three years pending cases. In 2020, the so-called "pathological civil backlog" increased, but in the first three quarters of 2021, the trend of disposing resumed.

The national average figure continued to reflect important territorial differences, despite the clear and significant progress made by the South over the years (Figure 4). In 2021, the actual average length of civil proceedings in the South was 600 days, more than twice as long as in the North-West (253).

The differences among regions also remained considerable: they ranged from 157 days on average in Valle d'Aosta to 845 in Basilicata, where, however, there was a significant increase between 2019 and 2021 (+85 days). Among the most significant reductions over the same period are those of Emilia-Romagna, which falls to 266 days on average in 2021 (-34 days) and Toscana (341; 34 days).

Figure 4. Length of civil proceedings set up in ordinary courts by geographic area. Years 2012-2021. Effective average duration in days



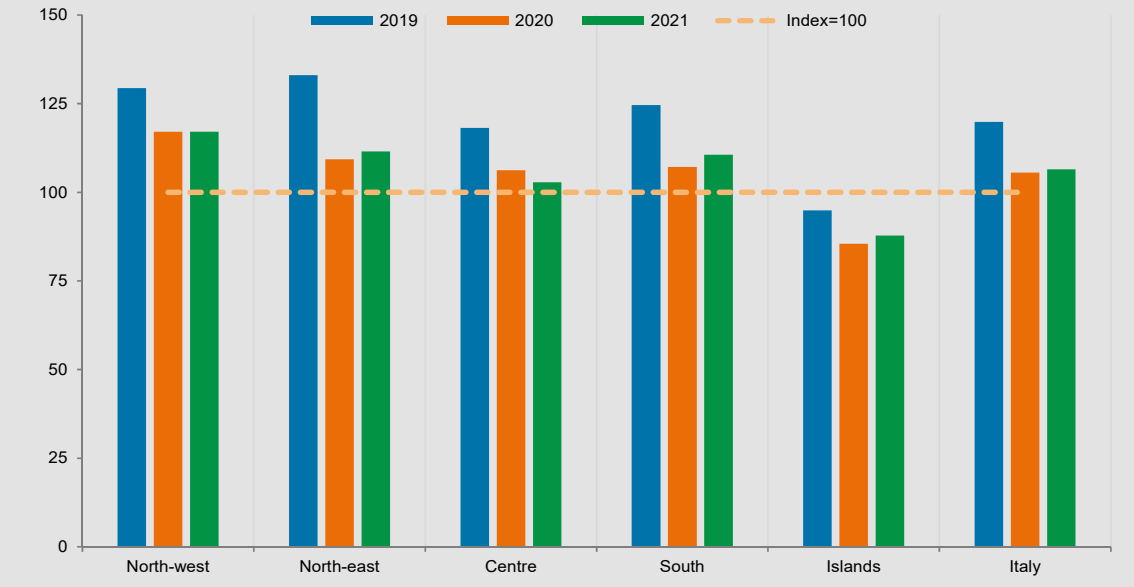
Source: Ministry of Justice - Judicial organization department

Prison crowding worsened again in 2021

As of 31 December 2021, there were 54,134 adults detained in Italian penal institutions, 106.5 per 100 regulatory places. During 2021, the prison crowding index rose again, 1

percentage point higher than in 2020. In that year the deflationary measures adopted by the Government[13] in the first phase of the COVID-19 emergency and the drop in crimes and arrests during the lockdown had led to a significant reduction in the prison population (from 60,769 men and women at the end of 2019 to 53,364 at the end of 2020).
The resumption of the upward trend confirms the structural nature of the problem in Italy, although the value of the crowding index in 2021 remained well below the critical level reached in 2019 (119.9%). Before the COVID-19 emergency, according to the Council of Europe data, Italy ranked second-worst among the 27 EU countries after Cyprus (134.6%); at the end of 2020 its ranking had relatively improved, but still remained low[14].
The situation continued to be most critical in prisons in the North-west (117.1%), the North-east (111.5%) and the South (110.6%), where, moreover, crowding increased by 3.5 percentage points in the last year (Figure 5).
The highest crowding rate was observed in Bolzano (133.0%), where, in the sole detention institution in the territory the ratio between admissions and regulatory capacity worsened by more than 20 percentage points in the last year. The critical points already observed for Puglia were confirmed, with a regional average of 129.3 and almost all the institutes in a condition of overcrowding; for Lombardia, with an average of 127.9 inmates per 100 places and all the prisons exceeding the threshold of 100%; for Friuli-Venezia Giulia (125.3) where only one institute was not overcrowded. In seven cases, the indicator remained below the critical threshold. These include: Trento (72.9), Sardegna (76.4) and Valle d'Aosta (78), the latter with an important improvement of the situation in the last year (-19 percentage points - Figure 6).

Figure 5. Prison density by geographic area. Years 2019-2021. Percentage on the total capacity of penal institutions

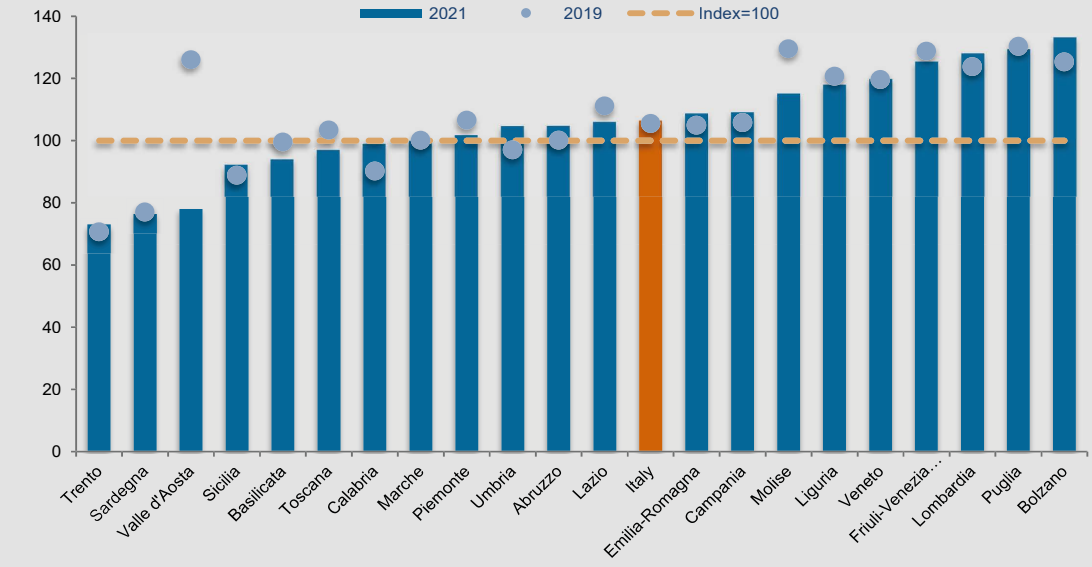


Source: Istat - Processing of data from Ministry of Justice, Penitentiary Administration Department

13 Decree-Law No. 18 of 17 March 2020, so-called. "Cura Italia", provided for the transfer to care and treatment facilities or directly to the home of prisoners with total or residual sentences of less than 18 months.

14 According to the provisional data available for the year 2020, Italy was sixth to last out of the 24 monitored countries. See: Council of Europe Annual Penal Statistics https://wp.unil.ch/space/space-i/prison-stock-on-1-january/prison-stock-on-1st-january-2020/.

Figure 6. Prison density by region. Years 2019 and 2021. Percentage on the total capacity of penal institutions



Source: Istat - Processing of data from Ministry of Justice, Penitentiary Administration Department

Indicators

1. **Voter turnout:** Percentage of eligible voter who cast a ballot in the last election for the European Parliament (excluding voting abroad).
   Source: Ministry of the Interior.
2. **Trust in the parliament:** Average score of trust in the Italian Parliament (on a scale from 0 to 10) expressed by people aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
3. **Trust in judicial system:** Average score of trust in the judicial system (on a scale from 0 to 10) expressed by people aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
4. **Trust in political parties:** Average score of trust in political parties (on a scale from 0 to 10) expressed by people aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
5. **Trust in police and fire brigade:** Average score of trust in the police and the fire brigade (on a scale from 0 to 10) expressed by people aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
6. **Women and political representation in national Parliament:** Percentage of women on total members of Parliament (excluding senators and deputies elected in foreign constituencies and senators for life).
   Source: Istat - Processing of data from the Chamber of Deputies and the Senate.
7. **Women and political representation at regional level:** Percentage of women elected in regional councils on total number of elected people.
   Source: Istat - Processing of data from Regional councils.
8. **Women in decision-making bodies:** Percentage of women in position of high responsibility within the following bodies: Italian embassies abroad, Constitutional court, Magistrates' Governing Council (including magistrates who participate in the functioning of the Body), and some Independent Administrative Authorities (for Communications, Antitrust, Data protection, Consob - Italian Securities and Investments Board).
   Source: Istat - Processing of data from Italian Embassies abroad, Constitutional Court, Magistrates' Governing Council and some Independent Administrative Authorities.
9. **Women in the boards of companies listed in stock exchange:** Percentage of women in the board of companies listed in stock exchange.
   Source: Consob.
10. **Mean age of members of national Parliament:** Average age of members of national Parliament. Senators and deputies elected in foreign constituencies and senators for life are excluded.
    Fonte: Istat, Elaborazione su dati della Camera dei Deputati e del Senato della Repubblica.
11. **Length of civil proceedings:** Effective average duration in days of proceedings set up in ordinary courts.
    Source: Istat - Processing of data from the Chamber of Deputies and the Senate.
12. **Prison density:** Percentage of prisoners in penal institutions on the total capacity of penal institutions.
    Source: Istat - Processing of data from Ministry of Justice, Penitentiary Administration Department.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Voter turnout (a) 2019	Trust in the Italian parliament (b) 2020	Trust in judicial system (b) 2020	Trust in political parties (b) 2020	Trust in police and fire brigade (b) 2020	Women and political representation in Parliament (c) 2018
Piemonte	64.7	4.6	4.8	3.4	7.6	35.3
Valle d'Aosta/Vallée d'Aoste	51.9	4.1	4.6	2.9	7.5	50.0
Liguria	58.5	4.6	4.8	3.3	7.6	25.0
Lombardia	64.1	4.4	4.5	3.3	7.4	29.8
Trentino-Alto Adige/Südtirol	59.9	4.4	4.8	3.4	7.6	44.4
Bolzano/Bozen	*62.8*	*4.5*	*5.1*	*3.7*	*7.7*	....
Trento	*57.3*	*4.4*	*4.5*	*3.1*	*7.6*	....
Veneto	63.7	4.2	4.5	3.1	7.6	33.8
Friuli-Venezia Giulia	57.0	4.3	4.5	3.0	7.6	35.0
Emilia-Romagna	67.3	4.7	4.9	3.4	7.7	35.8
Toscana	65.8	4.7	4.7	3.4	7.5	33.3
Umbria	67.7	4.7	4.7	3.3	7.8	37.5
Marche	62.1	4.4	4.6	3.2	7.3	37.5
Lazio	53.3	4.6	4.8	3.2	7.4	40.2
Abruzzo	52.6	4.6	4.8	3.2	7.5	23.8
Molise	53.3	4.7	4.7	3.3	7.2	40.0
Campania	47.6	4.9	5.2	3.6	7.2	36.8
Puglia	49.8	4.7	5.0	3.6	7.2	41.3
Basilicata	47.3	4.6	4.9	3.2	7.1	15.4
Calabria	44.0	4.6	5.2	3.3	7.4	41.9
Sicilia	37.5	4.6	5.0	3.1	7.3	43.8
Sardegna	36.3	4.2	4.9	3.0	7.5	28.0
North	63.7	4.5	4.6	3.3	7.6	33.0
North-west	63.6	4.5	4.6	3.3	7.5	31.0
North-east	63.9	4.4	4.7	3.2	7.6	35.8
Centre	59.3	4.6	4.7	3.3	7.5	37.5
South and islands	44.7	4.7	5.1	3.4	7.3	37.4
South	48.3	4.8	5.1	3.5	7.3	36.4
Islands	37.2	4.5	5.0	3.1	7.4	39.8
Italy	56.1	4.6	4.8	3.3	7.5	35.4

(a) Per 100 eligible persons;
(b) Average trust on a 0-10 scale expressed by persons 14 and over;
(c) Per 100 elected persons;
(d) Percentage of women in the total membership;
(e) Excluding senators and deputies elected in foreign constituencies and senators for life;
(f) Duration in days;
(g) Number of prisoners per 100 available places as defined by the regulatory capacity.

Women and political representation at regional level (c)	Women in decision-making bodies (d)	Women in the boards of companies listed in stock exchange (d)	Mean age of members of Parliament (e)	Length of civil proceedings (f)	Prison density (g)
2020	2020	2020	2018	2021	2021
15.7	....	....	47.8	213	101.9
11.4	....	....	42.0	157	78.0
19.4	....	....	47.3	258	117.9
24.7	....	....	48.6	271	127.9
25.7	....	....	48.2	192	83.5
25.7	....	....	....	*189*	*133.0*
25.7	....	....	....	*194*	*72.9*
35.3	....	....	47.9	297	119.7
14.3	....	....	51.0	191	125.3
32.0	....	....	49.0	266	108.8
35.0	....	....	47.7	341	97.1
38.1	....	....	46.3	461	104.7
29.0	....	....	45.6	339	100.0
31.4	....	....	49.5	424	106.1
16.1	....	....	46.5	350	104.8
28.6	....	....	46.6	501	115.1
15.7	....	....	47.7	590	109.2
13.7	....	....	44.5	596	129.3
4.8	....	....	47.9	845	94.2
19.4	....	....	45.3	734	99.1
21.4	....	....	44.8	611	92.4
13.3	....	....	49.9	530	76.4
23.2	....	....	48.4	256	115.2
19.4	....	....	48.2	253	117.1
26.8	....	....	48.7	262	111.5
32.9	....	....	48.2	397	102.8
16.7	....	....	46.2	598	101.7
16.0	....	....	46.3	600	110.6
17.7	....	....	46.1	595	87.8
22.3	19.7	41.2	47.6	426	106.5

7. Safety[1]

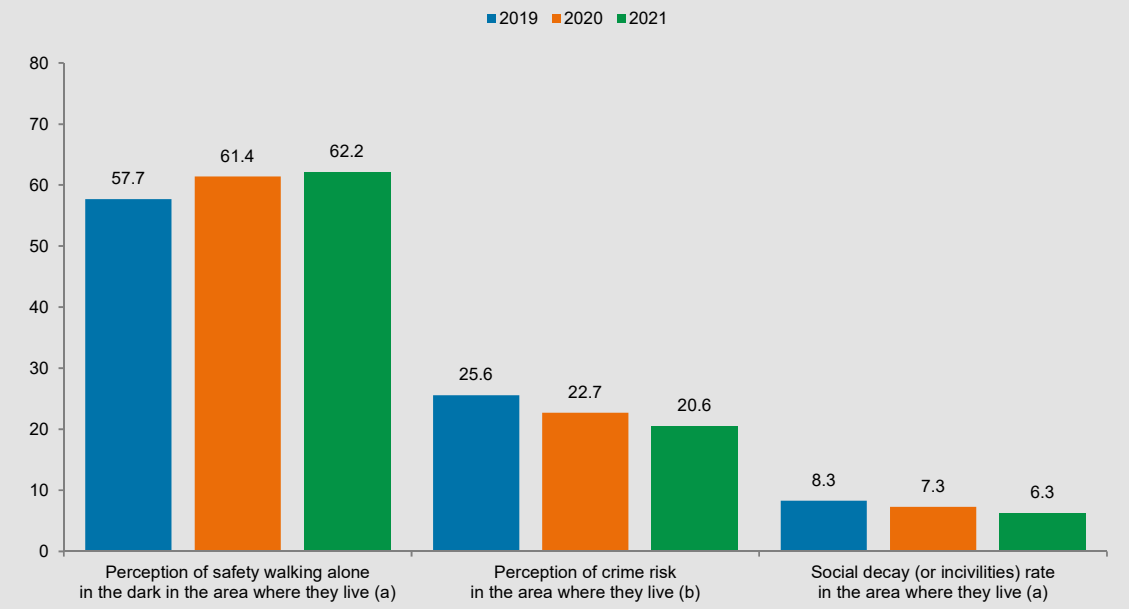
The safety of citizens is a key dimension in the construction of individual and collective well-being. The population's sense of insecurity and the fear of being the victim of criminal acts can greatly influence each individual's personal freedom, quality of life and the development of territories.
The objective and subjective indicators measuring the evolution of safety in Italy show a general tendency towards improvement both in the long term and in the two years of the pandemic.
Despite this, deep territorial inequalities persist: homicides are more widespread in Southern Italy, although they have declined sharply over time, while burglary, pick-pocketing and robbery prevail in the Centre-North; the level of safety perceived by the population is higher in small towns than in large urban areas.
In 2020 and 2021, the trend of improvement in perceived safety in the area in which one lives continued, with the perception of safety when walking alone in the dark increasing and the perception of degradation and crime risk decreasing.
In the first year of the pandemic, the restrictive measures imposed by the health emergency led to a sharp reduction in predatory crimes (burglary, pick-pocketing and robbery). These crimes, which in 2020 reached the lowest values since 2004, in 2021, with the loosening of the restrictive measures on mobility and social contacts, returned to grow slightly but remained far below the values recorded in the pre-pandemic period.
In 2020, the downward trend in the homicide rate of men was confirmed, while that of women remained stable. Provisional data confirmed also for 2021 the stable trend in the homicide rate of women.
In 2020, 92.2% of female homicides were committed by a known person and, in particular, about 6 out of 10 women were killed by their current or former partner. Among men, by contrast, only 39.4% were killed by a known person and only 2.9% by their partner or ex-partner.

Subjective perception of safety keeps improving

An analysis of the population's perceptions revealed an overall positive trend both compared to the two-year period of the pandemic and when analysing long-term data.
The proportion of people who said they felt very or quite safe walking alone when it is dark in the area where they live stood at 62.2% (it was 57.7% in 2019). This is the highest value recorded since 2010.
The decrease in the perception of degradation in the area where people live was among the positive signs: in 2021, 6.3% of the population said they had seen people who take or sell drugs, vandalism against the public goods, prostitutes looking for clients in the area where they live (it was 8.3% in 2019), which was the lowest value since 2009.
The proportion of households declaring a very high or quite high risk of crime in the area where they live continued to fall, standing at 20.6% (it was 25.6% in 2019). This indicator reached again the lowest value in the whole time series (Figure 1).

1 This chapter was edited by Miria Savioli, with contributions from Isabella Corazziari, Maria Giuseppina Muratore and Franco Turetta.

Figure 1. Perception of safety in the area where people live: people aged 14 and over feeling very or quite safe walking alone when it is dark, people aged 14 and over who often see elements of social and environmental decay, households declaring a very high or quite high risk of crime. Years 2019, 2020 and 2021. Percentages



Source: Istat, Survey on Aspects of daily life
(a) Per 100 persons aged 14 and over;
(b) Per 100 households.

Significant differences emerged in the level of safety perceived by the population with respect to the size of their town of residence: people living in towns with up to 2,000 inhabitants and in towns with 2,000 to 10,000 inhabitants felt safer, perceived a lower risk of crime and reported less social and environmental degradation than those living in large urban areas.

In towns with 2,000 to 10,000 inhabitants, the proportion of people aged 14 years and over who declared that they felt very or quite safe walking alone when it is dark in the area in which they live was 19 percentage points higher than in large urban areas (71.3% versus 52.2%).

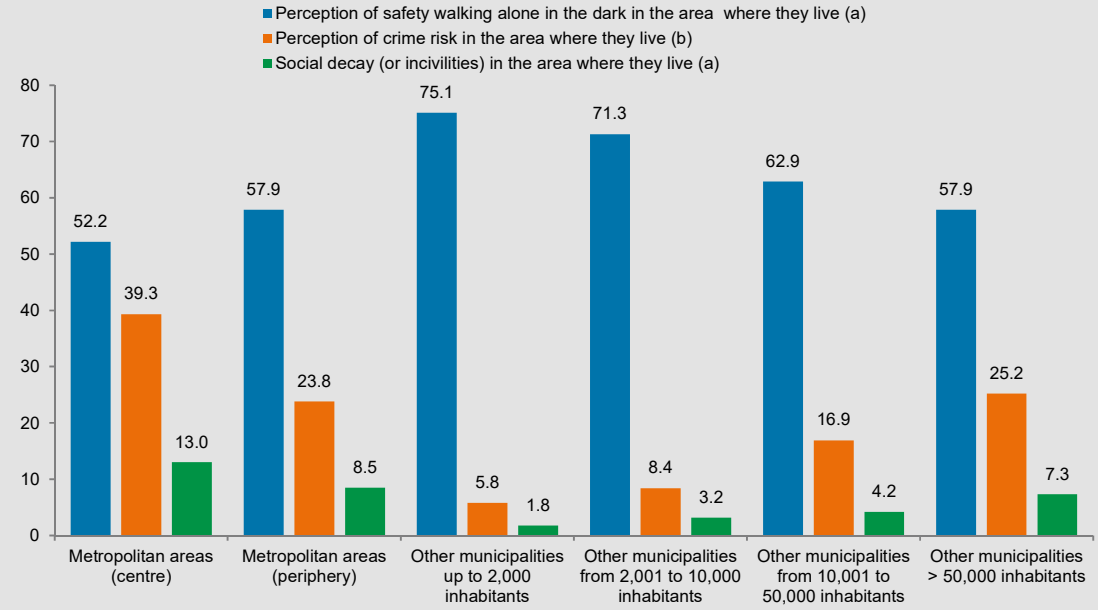
The same applies to the perception of the risk of crime (8.4% versus 39.3%) and social and environmental degradation (3.2% versus 13.0% - Figure 2).

The perception of safety was not evenly distributed in the population but varied according to gender, age and level of education.

Almost three-quarters of men felt safe walking alone when it is dark in the area where they live compared to just over half of women (51.2%). The situation also differed in relation to different age groups: the least safe were the elderly aged 75 and over (41.6%) and particularly women (33.8%), whereas young people and adults perceived a higher level of safety (Figure 3).

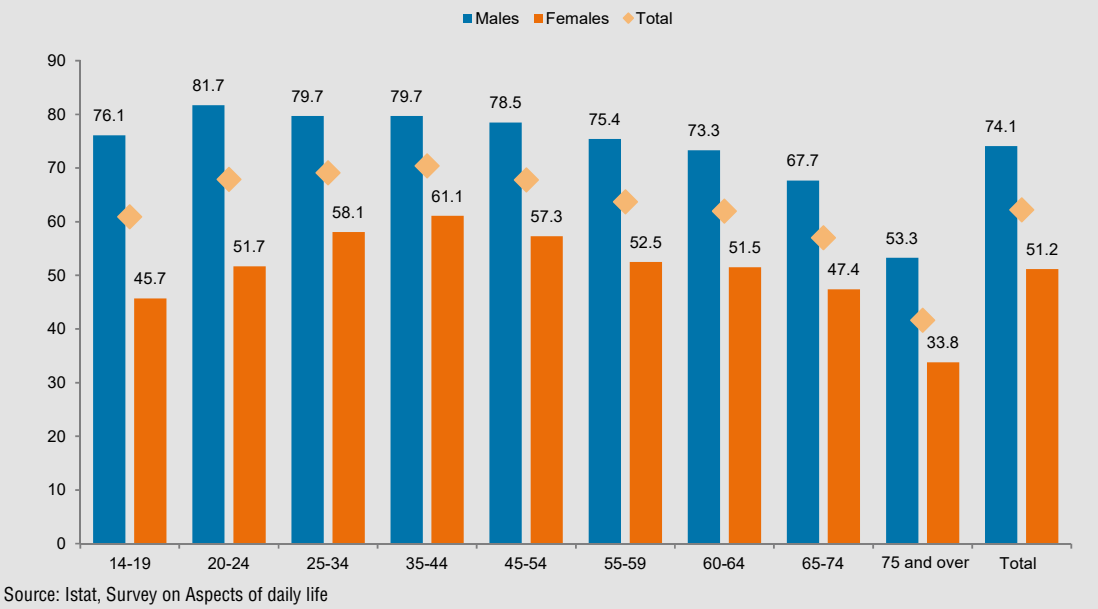
The perception of safety was highest among university graduates (67.3%), especially males (78.9% compared to 58.1% of female graduates) and lowest among those with no more than a lower secondary qualification (58%), especially females (46.8%).

Figure 2. Perception of safety in the area where people live: people aged 14 and over feeling very or quite safe walking alone when it is dark, people aged 14 and over who often see elements of social and environmental decay, households declaring a very high or quite high risk of crime by municipality size. Year 2021. Percentages



Source: Istat, Survey on Aspects of daily life
(a) Per 100 persons aged 14 and over;
(b) Per 100 households.

Figure 3. People aged 14 and over feeling very or quite safe walking alone when it is dark in the area where they live by gender and age group. Year 2021. Percentages

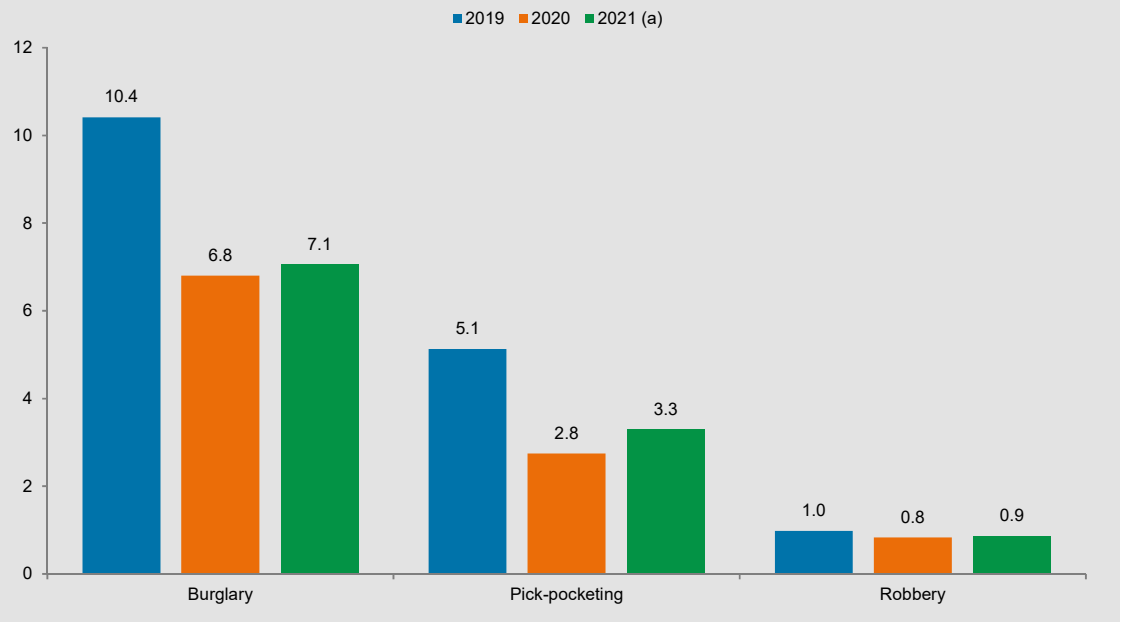


Source: Istat, Survey on Aspects of daily life

Predatory crimes decreased during the pandemic

In the first year of the pandemic, the restrictive measures imposed by the health emergency had led to a sharp reduction in predatory crimes (burglary, pick-pocketing and robbery). In 2020, these crimes reached the lowest values ever recorded since 2004 after peaking in 2013 for robbery and in 2014 for burglary and pick-pocketing.
Then in 2021, with the loosening of restrictive measures on mobility and social contacts, crime rose slightly again compared to 2020 but remained far below the values recorded in 2019.
In 2021, the rate of victims of burglary stood at 7.1 per 1,000 households (compared to 6.8 in 2020 and 10.4 in 2019), the rate of victims of pick-pocketing was 3.3 victims per 1,000 inhabitants (compared to 2.8 in 2020 and 5.1 in 2019) and the rate of victims of robbery was 0.9 victims per 1,000 inhabitants (it was 0.8 in 2020 and 1.0 in 2019 - Figure 4).

Figure 4. Households that were victims of burglaries and persons that were victims of robberies and pick-pocketing. Years 2019, 2020 and 2021. Burglaries per 1,000 households, and robberies and pick-pocketing per 1,000 population

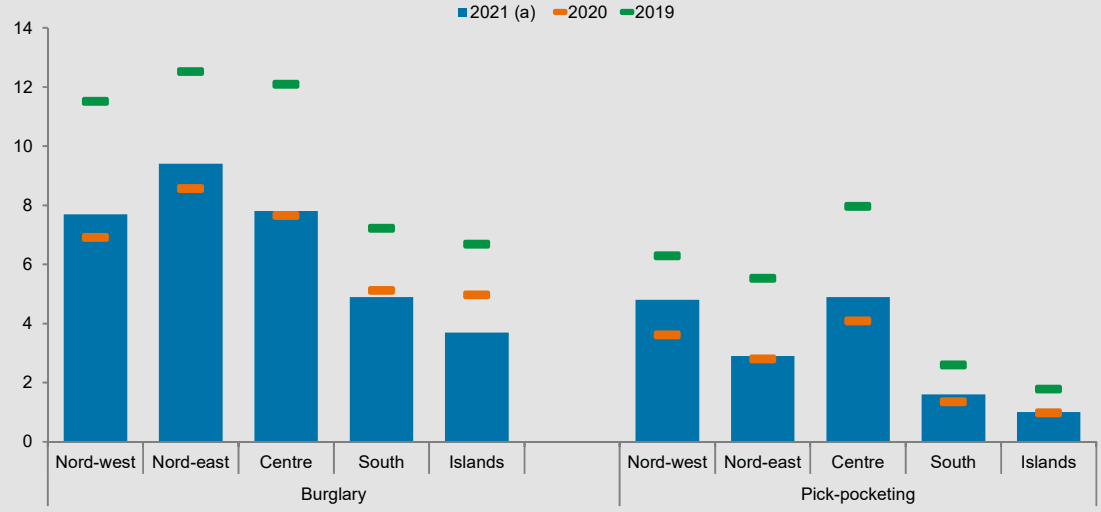


Source: Istat, processing of data on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey
(a) Provisional data.

Predatory crimes are distributed differently across the territory. The highest rate of victims of pick-pocketing was found in the Centre and the North-west with respectively 4.9 victims and 4.8 victims per 1,000 inhabitants compared to 1.4 victims per 1,000 inhabitants in the South and Islands (1.6 victims per 1,000 inhabitants in the South and 1 victim per 1,000 inhabitants in the Islands).
Burglary was more widespread in the Centre-North and in particular in the North-east, where there were 9.4 victims per 1,000 households, whereas in the South and the Islands the figure was 4.9 and 3.7 victims per 1,000 households, respectively.
For robbery, on the other hand, there were much smaller differences: the highest value was in the North-west with 1 victim per 1,000 inhabitants and the lowest in the Islands (0.4 victims per 1,000 inhabitants - Figure 5).

Between 2019 and 2020, the decrease in the rate of victims of burglary and pick-pocketing was steepest in the Centre-North where the values were highest. In 2021, victims of burglary per 1,000 households slightly increased again in the North and Central regions, while they continued to decrease in the South and particularly in the Islands, while victims of pick-pocketing increased in all geographic areas except the Islands, but more markedly in the North-west and in the Centre.
Between 2019 and 2020, robbery victims per 1,000 inhabitants decrease the most in the North-west and in the Centre-South regions, where the phenomenon was most widespread. In 2021, the victim rate increased again in the northern regions, remained stable in the Centre, and continued to decrease in the South and Islands.

Figure 5. Households that were victims of burglary and persons that were victims of pick-pocketing by geographic breakdown. Years 2019, 2020 and 2021. Burglaries per 1,000 households and pick-pocketing per 1,000 population

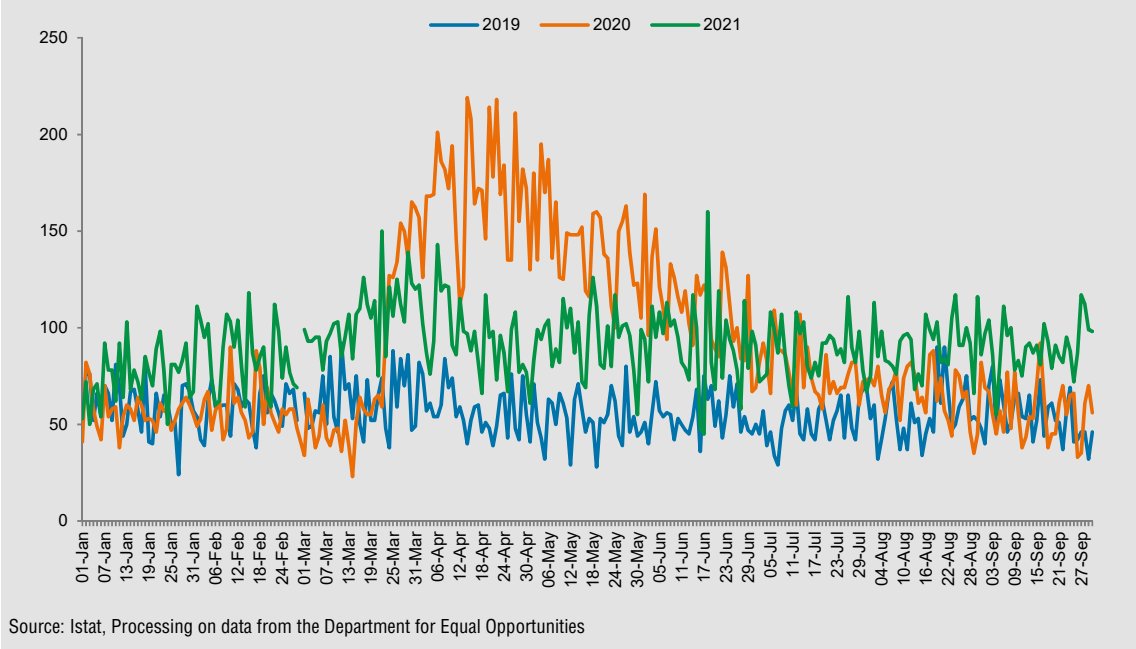


Source: Istat, processing of data on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey
(a) Provisional data.

Calls to the 1522 helpline increased in the two years of the pandemic

The 1522 helpline[2] against violence and stalking, provided by the Department for Equal Opportunities of the Presidency of the Council of Ministers, is a very supportive tool for victims of violence.
The information and awareness-raising campaigns against violence and stalking, carried out by the Department for Equal Opportunities of the Presidency of the Council of Ministers and disseminated between March and April 2020, reinforced the message of the importance of seeking help to get out of violence.
The data collected by 1522 showed a sharp increase in valid calls[3] during the lockdown; calls then decreased during Phase 2 of the pandemic and the gradual and progressive reopening from May onwards[4]. In 2021, the number of valid calls continued to remain higher than the same months of 2020, except for the lockdown months, and 2019 (Figure 6).

Figure 6. Number of valid calls to the 1522 number. January 1, 2019-September 30, 2021 (daily data). Absolute values



Source: Istat, Processing on data from the Department for Equal Opportunities

In the first three quarters of 2021, among the reasons for contacting the helpline, calls for "requests for help from victims of violence" and "reports of violence" continued to dominate, which together made up 45% (11,105) of valid calls. Compared to the same period of the

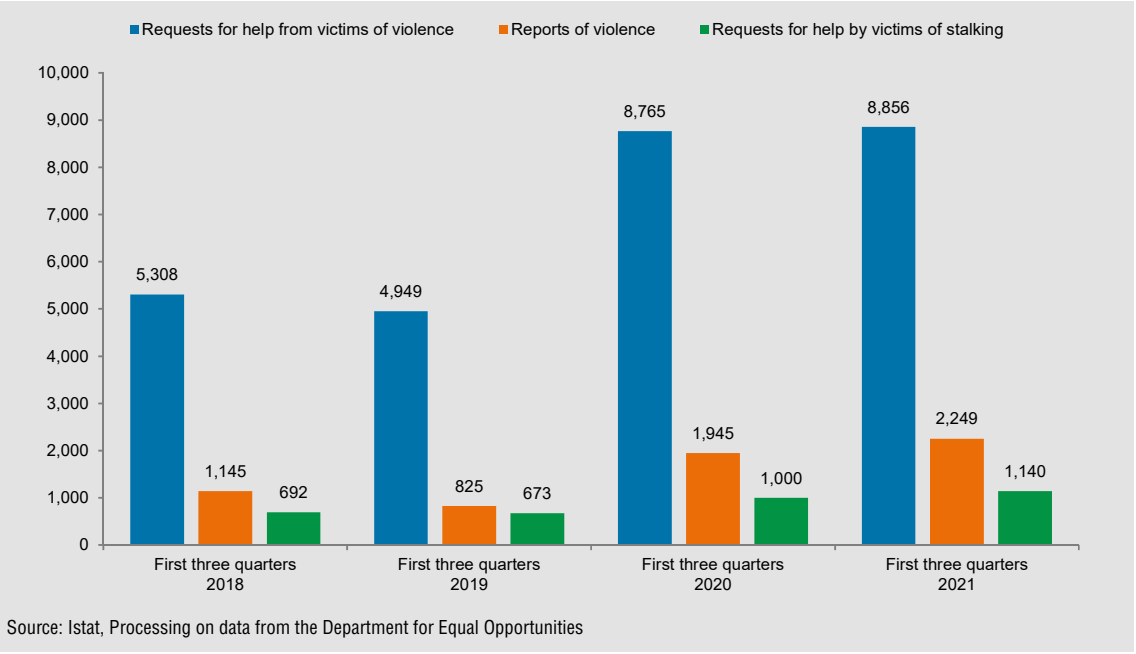
2 The 1522 number is active 24 hours a day, every day of the year, and can be reached toll-free throughout the nation on a land-line or cell phone. The helpline is available in Italian, English, French, Spanish and Arabic. The telephone operators working for the service provide a first response to the needs of victims of gender-based violence and stalking, offering useful information and an introduction to the anti-violence centres and public and private social/healthcare services available everywhere in Italy and listed on the DPO's official map.

3 Incorrect calls, pranks calls and calls from stalkers are excluded.

4 Sources: Istat, *Il numero verde 1522 durante la pandemia - Third quarter 2021, 25 November 2021* https://www.istat.it/it/archivio/250804; Istat, *L'effetto della pandemia sulla violenza di genere 2020-2021*, 25 November 2021, https://www.istat.it/it/archivio/263847.

previous year, they increased, as well as the number of calls for "requests for help by victims of stalking" (Figure 7).
Data from the first three quarters of 2021 confirmed that the place where violence most frequently occurred is the victim's home: 85.2% of the victims declared, in fact, that the violent act occurred in their home (86.2% in the first three quarters of 2020).

Figure 7. Valid calls to the 1522 number for some reasons for calling. Years 2018-2021 (first three quarters). Absolute values



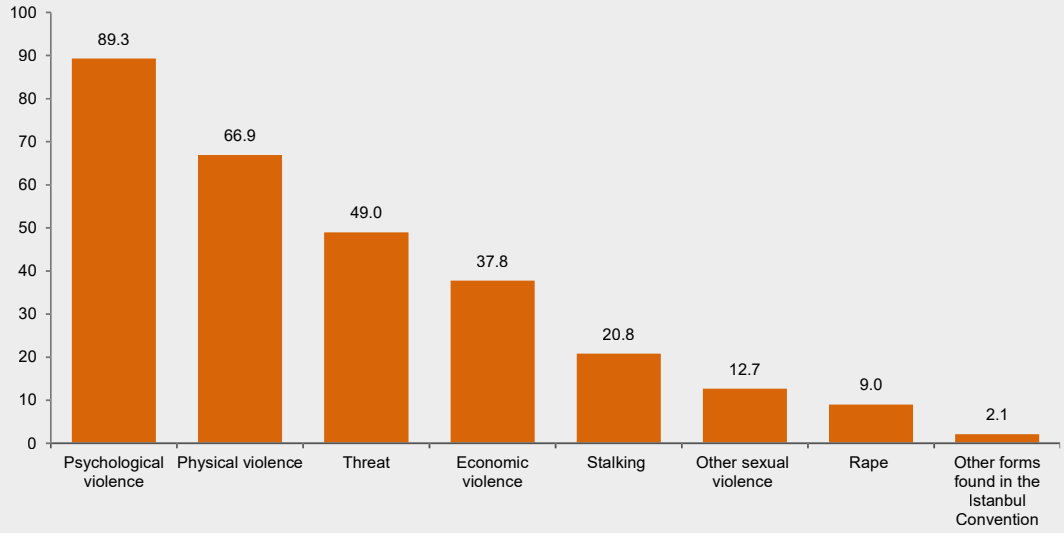
Source: Istat, Processing on data from the Department for Equal Opportunities

The proportion of victims who reported the violence they experienced to the police continues to remain very low: in the first three quarters of 2021, only 17.2% declared that they had filed a complaint, which should be added to the 3.0% of victims who filed a complaint but then withdrew it.

ANTI-VIOLENCE CENTRE USERS IN THE FIRST YEAR OF THE PANDEMIC

In 2020, more than 15,000 women started a customised pathway out of violence at the Anti-Violence Centres adhering to the State-Regions Agreement[1].
Over 90% of women (about 13,700) went to an Anti-Violence Centre for the first time in 2020. 5.6% of these started their path out of violence in March 2020 and 15% did so between April and May, overcoming the restrictions of the health emergency.
For 19.9% of the women (more than 3,000), it was an emergency intervention, which increased in March, April and May, when the highest percentages were registered.
29.4% of the women who decided to undertake a pathway out of violence were between 40 and 49 years old, 26.9% between 30 and 39 years old, 18.8% were under 30, and 16.9% between 50 and 59 years old. 72% were Italian citizens and 59% were domiciled in the same province where the centre was located.
Considering the cases in which information on the duration of violence was present (about 10,400), it emerges that for 74.2% of the women, about 7,700, the violence did not originate with the pandemic but existed before: 40.6% of the women had suffered violence for more than 5 years, 33.6% from 1 to 5 years.
The history of violence saw 9 out of 10 women having suffered psychological violence, 66.9% physical violence and 49.0% threats, 37.8% economic violence (Figure A). The stories described the perpetration of more than one type of violence: only 16.3% experienced only one type of violence while 10.5% experienced more than four.
In 59.8% of the cases, the offender of the violence was the cohabiting partner, 23% an ex-partner, and 9.5% another family member or relative; violence suffered outside the family and the couple constituted only the remaining 7.7%.

Figure A. Women who started the personalised path out of violence by type of violence experienced before contacting the Anti-Violence Center (CAV). Year 2020. Percentages



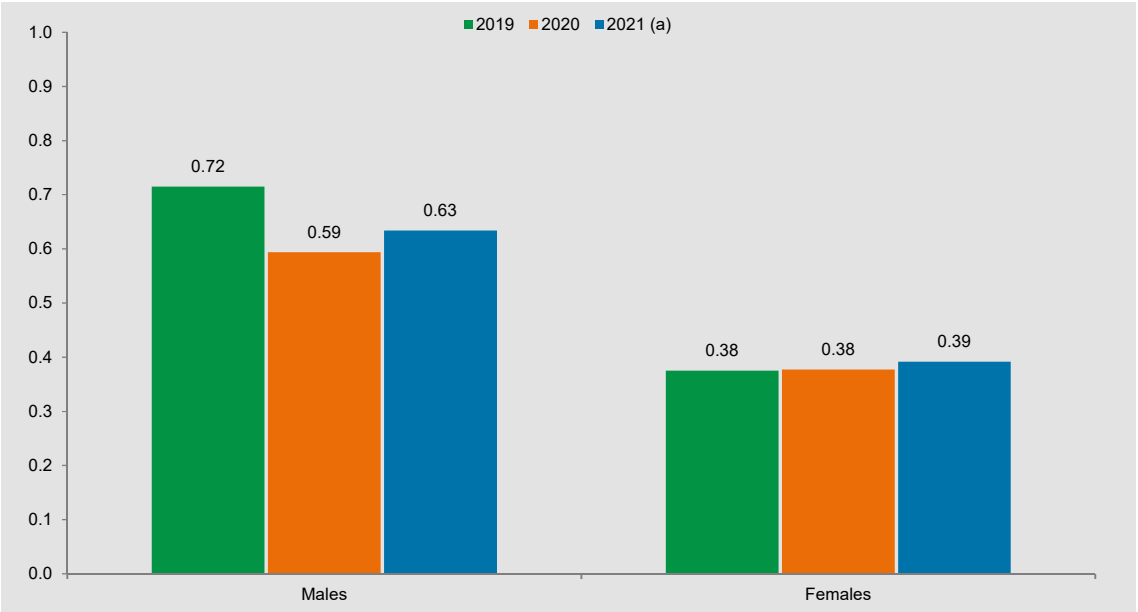
Source: Istat, Survey of Anti-Violence Center Users

1 According to the State, Regions and Autonomous Provinces Agreement of 2014, Anti-Violence Centres are "facilities that welcome women of all ages and their minor children - free of charge - who have suffered violence, regardless of their place of residence". In 2020, 270 out of 365 Anti-Violence Centres participated in the survey, with a response rate of 74%.

In 2020, the first year of the pandemic, homicides continued to decrease among men, while they remained stable among women

In 2020, 289 homicides were committed in Italy, 0.49 per 100,000 inhabitants. The homicide rate decreased further compared to 2019 when it stood at 0.53 per 100 thousand inhabitants (for a total of 318 homicides), confirming the long-term downward trend. Provisional data for 2021 showed a slight increase in the homicide rate (0.51)[5].
In 2020, there were 172 male and 115 female homicide victims[6] (0.59 and 0.38 homicides per 100,000 inhabitants of the same gender, respectively). Between 2019 and 2020, the downward trend in the homicide rate for men was confirmed (it was 0.72 in 2019); the provisional data for 2021, on the other hand, showed a slight increase (0.63), although it remained below the 2019 value.
In contrast, the homicide rate of women showed overall stability over the three years (0.39 in 2021 - Figure 8).
In 2020, the decrease in the homicide rate was mainly due to the regions of the South and

Figure 8. Homicide rate by gender. Years 2019-2021. Per 100,000 inhabitants of the same gender



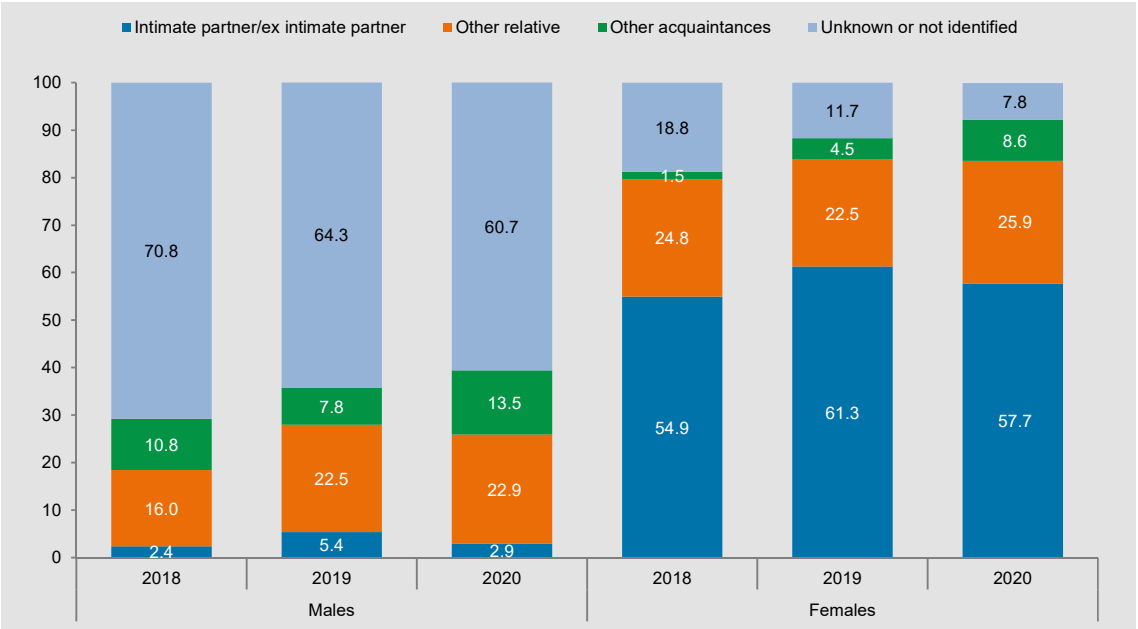
Source: Ministry of the Interior - Department of Public Security (SDI/SSD database), years 2019 and 2020. For the year 2021 Report Omicidi volontari. March 2022 (https://www.interno.gov.it/sites/default/files/2022-03/22_settimanale_omicidi_21_marzo_2022.pdf)
(a) Provisional data.

Islands, where the rate went from 0.71 to 0.60 per 100,000 inhabitants.
Despite the fact that, in the long run, the largest decrease was observed in the South and Islands, this area continues to record the highest homicide rate (0.60 against 0.42 in the North and 0.43 per 100 thousand inhabitants in the Centre).
Italy ranked among the countries with the lowest incidence of homicides, being second to last in the ranking (0.53 homicides per 100,000 inhabitants in 2019). Among the EU

5 Source: Ministry of the Interior, *Report Omicidi volontari. March 2022*, https://www.interno.gov.it/sites/default/files/2022-03/22_settimanale_omicidi_21_marzo_2022.pdf.
6 The number of homicide victims (males + females) may differ slightly from the number of homicide crimes due to data extractions made at different times.

countries, only Slovenia had a better situation than Italy, with a homicide rate of 0.48 per 100,000 inhabitants.
Even considering female victims, Italy was one of the EU countries where the incidence of homicides was lower. In 2019, the rate was 0.36 homicide victims per 100 thousand women, which is higher only than Greece (0.34) and Ireland (0.32).
Although the homicide rate for men is still significantly higher than for women, progress over time has been considerable. On the other hand, for women, that started from a more favourable situation, the decrease over time has followed a much slower pace (occasionally registering slight increases) and can be attributed to a decrease in the number of victims by unknown or unidentified offenders, rather than to a decrease of victims within the family.
When examining the relationship between offender and victim of the homicide, strong differences remain between women and men: while women are mainly killed in the couple and within the family, men in most cases are victims of an offender who is unknown or unidentified by the police.
In 2020, 92.2% of female homicides were committed by a known person. This figure was up from 2018 when it stood at 81.2%. Specifically, approximately 6 out of 10 women were killed by their current or former partner, 25.9% by a family member (including children and parents) and 8.6% by another person the woman knew (friends, colleagues, etc.).
The situation is very different for men: in 2020, only 39.4 per cent were killed by a known person and only 2.9 per cent by a partner or ex-partner, while 60.7 per cent were killed by a stranger or offender not identified by the police (Figure 9).

Figure 9. Victims of homicide by relationship with the murderer and gender. Years 2018, 2019 and 2020 (a). Per 100 victims of the same gender



Source: Ministry of the Interior (DCPC), homicide database
(a) Figures related to the homicide victim and perpetrator relationship are extracted from the homicide database of the Ministry of the Interior (DCPC). Since this data are used for operational purposes, it is subject to changes that may emerge in subsequent extractions.

Indicators

1. **Intentional homicide rate:** Number of intentional homicide on total population per 100,000.
   Source: Ministry of the Interior - Department of Public Security (SDI/SSD database).
2. **Burglary:** Victims of burglaries per 1,000 households. The number of victims is calculated using data on victims who reported burglary to the police, adjusted by the number of non-reporting victims from the Citizens' Safety Survey, using a specific correction factor by geographical area.
   Source: Istat - Processing of data from crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
3. **Pick-pocketing:** Victims of pick-pocketing on total population per 1,000. The number of victims is calculated using data on victims who reported pick-pocketing to the police, adjusted by the number of non-reporting victims from the Citizens' Safety Survey, using a specific correction factor by geographical area and by sex and age group.
   Source: Istat - Processing of data from crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
4. **Robbery:** Victims of robberies on total population per 1,000. The number of victims is calculated using data on victims who reported robbery to the police, adjusted by the number of non-reporting victims from the Citizens' Safety Survey, using a specific correction factor by geographical area and by sex and age group.
   Source: Istat - Processing of data from crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
5. **Physical violence on women:** Percentage of women aged 16-70 victim of physical violence in the last 5 years before the interview on total women aged 16-70.
   Source: Istat - Women Safety Survey.
6. **Sexual violence on women:** Percentage of women aged 16-70 victim of sexual violence, including physical sexual harassment, in the last 5 years before the interview on total women aged 16-70.
   Source: Istat - Women Safety Survey.
7. **Intimate partnership violence:** Percentage of women aged 16-70 victim of physical or sexual violence by the partner or ex-partner during the 5 years before the interview on total women aged 16-70 who have or had a partner.
   Source: Istat - Women Safety Survey.
8. **Worries of being victim of a sexual violence:** Percentage of people aged 14 years and over who are very or quite worried of being victim of a sexual violence for yourself or for someone in your family.
   Source: Istat - Citizens' Safety Survey.
9. **Perception of safety walking alone in the dark:** Percentage of people aged 14 and over feeling very or quite safe walking alone when it is dark in the area where they live.
   Source: Istat - Survey on Aspects of daily life.
10. **Concrete fear:** Percentage of people aged 14 and over who are afraid of becoming concretely a victim of crime in the last 3 months.
    Source: Istat - Citizens' Safety Survey.
11. **Social decay (or incivilities):** Percentage of people aged 14 and over who often see elements of social and environmental decay in the area where they live. They often see at least one element of decay among the following: people who take drugs, people who sell drugs, vandalism against the public good, prostitutes looking for clients.
    Source: Istat - Survey on Aspects of daily life.
12. **Perception of crime risk:** Percentage of households declaring a very high or quite high risk of crime in the area where they live on the total number of households.
    Source: Istat - Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Intentional homicide rate (a)	Burglary (b)	Pick-pocketing (c)	Robbery (c)	Physical violence on women (d)	Sexual violence on women (d)
	2020	2021 (*)	2021 (*)	2021 (*)	2014	2014
Piemonte	0.7	7.9	4.8	0.9	6.3	6.2
Valle d'Aosta/Vallée d'Aoste	0.0	2.0	0.2	0.3	7.0	3.9
Liguria	0.6	5.7	3.7	1.0	7.8	7.6
Lombardia	0.4	8.1	5.1	1.1	6.1	6.6
Trentino-Alto Adige/Südtirol	0.4	3.8	1.7	0.6	6.8	5.1
Bolzano/Bozen	*0.6*	*4.3*	*2.4*	*0.9*	*6.9*	*5.9*
Trento	*0.2*	*3.5*	*1.0*	*0.3*	*6.7*	*4.3*
Veneto	0.3	11.2	2.5	0.6	5.0	6.2
Friuli-Venezia Giulia	0.2	5.3	0.7	0.3	5.9	5.9
Emilia-Romagna	0.3	10.0	4.3	1.3	8.2	6.7
Toscana	0.4	10.1	3.5	0.9	8.9	4.5
Umbria	0.1	9.2	1.4	0.5	8.0	6.9
Marche	0.6	5.0	1.1	0.4	7.8	5.0
Lazio	0.5	6.8	7.3	1.1	9.1	6.8
Abruzzo	0.2	6.5	0.9	0.4	9.3	9.1
Molise	0.0	5.1	0.6	0.2	7.7	7.1
Campania	0.7	5.0	2.6	1.4	8.4	8.8
Puglia	0.6	5.6	1.0	0.6	6.8	5.3
Basilicata	0.5	3.1	0.3	0.2	4.3	6.5
Calabria	0.7	2.6	0.4	0.2	4.6	4.7
Sicilia	0.7	4.0	1.1	0.5	5.7	5.2
Sardegna	0.6	2.7	0.7	0.3	6.6	5.2
North	0.4	8.4	4.0	1.0	6.4	6.4
North-west	0.5	7.7	4.8	1.0	6.3	6.6
Noth-east	0.3	9.4	2.9	0.9	6.5	6.3
Centre	0.4	7.8	4.9	0.9	8.8	5.9
South and Islands	0.6	4.5	1.4	0.7	6.9	6.5
South	0.6	4.9	1.6	0.8	7.3	7.2
Islands	0.7	3.7	1.0	0.4	5.9	5.2
Italy	**0.5**	**7.1**	**3.3**	**0.9**	**7.0**	**6.4**

(a) Per 100.000 inhabitants;
(b) Per 1.000 households;
(c) Per 1.000 inhabitants;
(d) Per 100 women aged 16-70;
(e) Per 100 women aged 16-70 who have or have had an intimate relationship with a partner;
(f) Per 100 persons aged 14 and over;
(g) Per 100 households;
(*) Provisional data.

Intimate partnership violence (e) 2014	Worries of being victim of a sexual violence (f) 2016	Perception of safety walking alone in the dark (f) 2021	Concrete fear (f) 2016	Social decay (or incivilities) (f) 2021	Perception of crime risk (g) 2021
4.7	33.7	64.0	2.6	6.1	18.4
3.6	16.3	79.4	4.7	1.2	5.6
6.2	26.1	64.4	5.0	4.8	20.2
4.6	32.4	59.0	9.5	7.3	21.3
4.5	19.5	74.3	4.6	3.9	9.2
4.9	*20.3*	*70.1*	*5.0*	*4.4*	*9.7*
4.2	*18.6*	*78.3*	*4.3*	*3.4*	*8.7*
4.4	29.9	62.0	7.6	4.7	17.4
3.0	26.0	70.3	4.3	2.8	11.3
5.9	28.5	64.1	8.5	6.4	19.5
4.9	29.1	67.1	6.4	6.3	18.6
5.2	26.5	63.5	5.0	6.4	18.4
4.3	19.7	66.0	6.5	4.8	13.9
5.7	37.8	55.5	7.9	10.1	30.4
7.6	28.5	67.6	4.9	3.6	14.0
6.9	23.1	70.0	4.6	2.7	7.0
5.8	23.1	57.8	5.2	8.8	31.9
4.6	22.2	62.9	5.8	5.8	22.0
4.4	24.6	76.6	6.9	2.5	12.3
2.4	34.4	74.2	4.7	2.9	11.1
4.6	24.1	56.6	4.3	5.0	19.8
4.4	23.0	70.5	3.8	4.8	10.5
4.8	30.3	62.6	7.2	6.0	18.9
4.8	31.9	61.0	7.1	6.7	20.3
4.8	28.0	64.8	7.3	5.1	16.8
5.2	31.9	61.0	7.0	7.9	23.8
4.9	24.6	62.4	4.9	5.8	21.0
5.1	25.0	63.5	5.3	6.2	22.8
4.5	23.9	60.1	4.2	4.9	17.3
4.9	**28.7**	**62.2**	**6.4**	**6.3**	**20.6**

8. Subjective well-being[1]

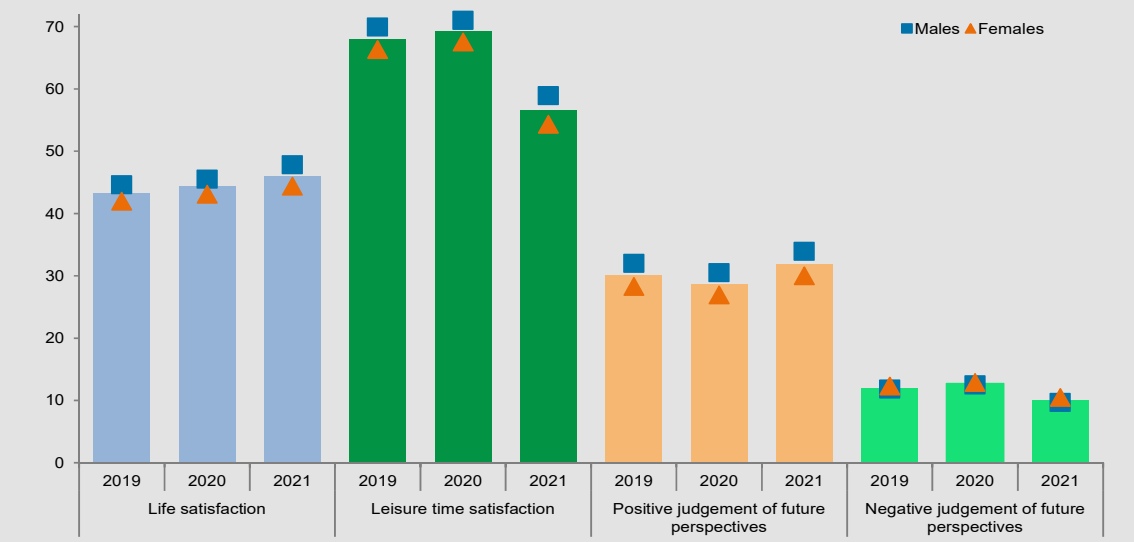
It took nine years to recover from the collapse in subjective well-being that occurred in 2012.The percentage of population very satisfied with their lives reached 46% again in 2021. And it was precisely the two pandemic years that ensured this achievement. The increase in subjective well-being in the pandemic years is consistent with findings in other countries. People are satisfied with their lives not only by taking into account what happens to themselves, but by relating it to the context, and in this case to the drama of the events related to the spread of *COVID-19*. The growth in subjective well-being occurred despite the sharp decline, which had never been seen since the beginning of the historical series, in leisure time satisfaction, which lost 12.6 percentage points in 2021. The effects of the change in leisure time lifestyles became clear in the second year of the pandemic, i.e. when the pandemic was prolonged and the restrictions on social relationships and leisure activities outside the home were extended. The collapse in satisfaction with leisure time did not hinder the growth in the perception of prospects for improving one's life, which rose again in 2021 after a decline in the first year of the pandemic, indicating the emergence of a feeling of optimism towards the future, which is crucial for the country's growth.

The share of people very satisfied with their lives grew but declined among 14-19-year-olds

The percentage of people who report being very satisfied with their lives (score between 8 and 10) increased in the two pandemic years, from 43.2% in 2019 to 44.3% in 2020 and 46% in 2021 (Figure 1).
After 9 years, this increase recovered the positive peak of 2011, which was never reached again after the collapse in satisfaction due to the economic crisis of 2012. Among the youngest age group (14-19 years), the recovery had been more rapid and, already in 2019, the 2011 level had been reached. But the figures hide different dynamics. During the years of the pandemic, young people were the only ones to experience a significant deterioration in life satisfaction, with the percentage falling from 56.9% in 2019 to 52.3% in 2021. Of course, they still maintained the highest levels, but the percentage point advantage over people aged 75 and over almost halved, from 21.4 points in 2019 to 12.9 in 2021 (Figure 2). In 2020, we observed a fragile situation for people living alone, the only population group to register a decline in the percentage of very satisfied with life. In 2021, these recovered and reached the highest observed level (38.3%).

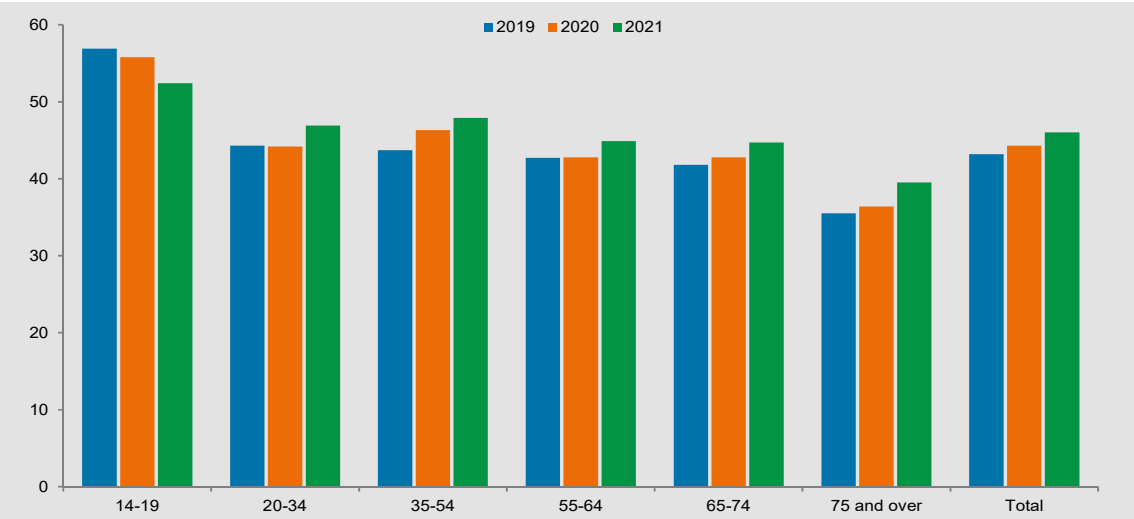
1 This chapter was edited by Paola Conigliaro and Alessandra Tinto, with contributions from Lorena Di Donatantonio.

Figure 1. Subjective well-being indicators by gender. Years 2019-2021. Per 100 persons aged 14 and over with the same characteristics



Source: Istat, Survey on Aspects of daily life

Figure 2. People aged 14 and over who gave a high score (8-10) to their life satisfaction, by age group. Years 2019-2021. Percentages



Source: Istat, Survey on Aspects of daily life

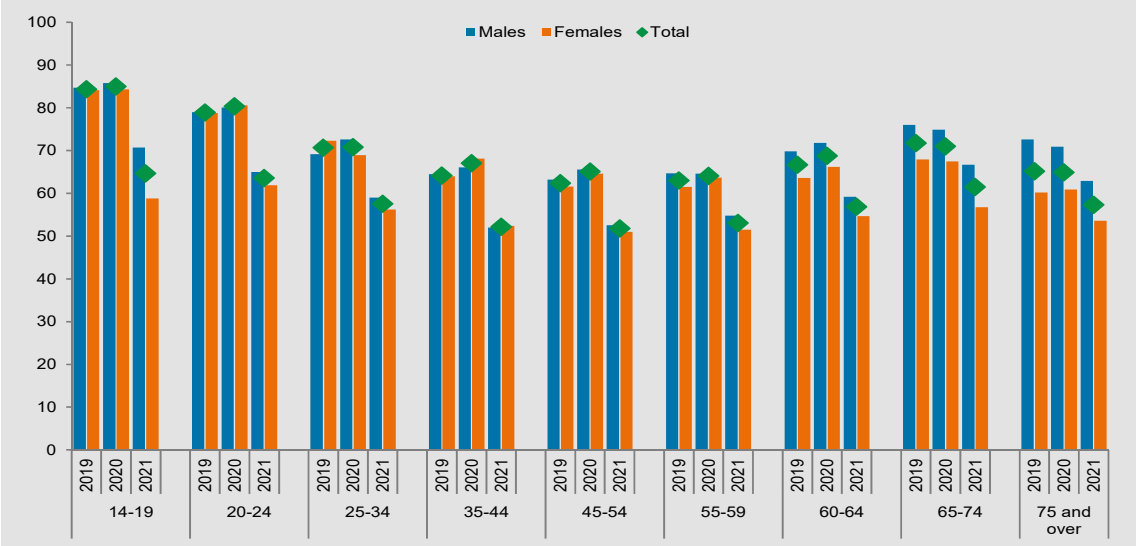
Leisure time satisfaction decreased, especially among the very young

On the other hand, leisure time satisfaction showed a clear collapse: the percentage of people who were very or fairly satisfied with their free time, after having risen by 1.2 percentage points to 69.2% in 2020, dropped by 12.6 points in 2021, settling at the lowest value ever recorded since 1993[2] (56.6%), with a more evident drop among women (-13.2 percentage points compared to 2020 - Figure 1). This figure appears to be a clear effect of the closures

2 The first year in which information was surveyed with the Aspects of Daily Life Survey.

and limitations that affected leisure activities outside the home and social relationships[3].
The collapse cut across all ages, but the situation was particularly critical for the very young, among whom leisure time satisfaction dropped by more than 20 percentage points compared to 2020 (-26.1 among girls), with 64.5% of 14-19-year-olds saying they were satisfied in 2021. The share remained consistent, but by virtue of this substantial decrease, the difference with the most dissatisfied (age group 45-54) in 2021 decreased to 12.8 percentage points, compared to 22 points in 2019.
A lower percentage of satisfaction for leisure time were observed, as in the past among those between the ages of 35 and 59, with percentages of just over 50% and a decrease of about one-fifth compared to the 2020 value. The relative position of people aged 75 and over improved with a smaller, albeit significant decrease (-7.6 percentage points - Figure 3).
Leisure time satisfaction was generally higher not only among those engaged in study but also for people who had retired from work and those seeking their first job, while it was lowest for those in employment.
In line with what was observed for the younger population, the reduction in the percentage of those satisfied with leisure in 2021 was particularly marked among students (-19.6 points). Female students in particular, with a decrease of 24.3 percentage points, had a percentage of satisfied (57.5%) that was very close to the female unemployed (58.3%) in 2021. The percentage of satisfied with leisure time also dropped most sharply among the employed in 2021 (-14.8 points).
Undoubtedly, the restrictions imposed by the measures against the spread of the pandemic considerably reduced socialising opportunities, especially for the very young, as well as the practice of non-competitive sporting activities, the possibility of going to concerts or simply eating or drinking out with friends.

Figure 3. People aged 14 and over who are very or quite satisfied with their leisure time, by age group and gender. Years 2019-2021. Percentages



Source: Istat, Survey on Aspects of daily life

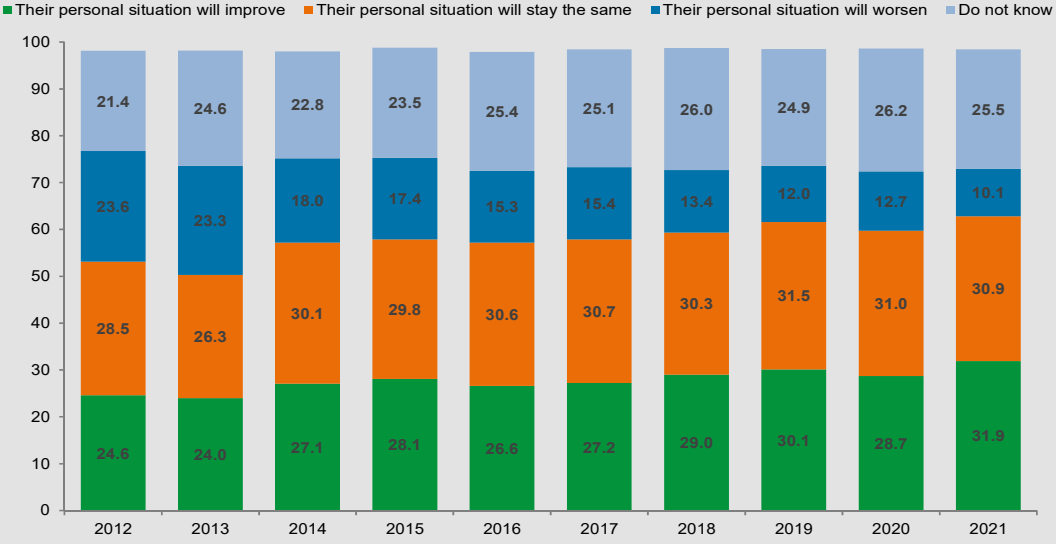
3 See chapters on Education and training and Social relationships.

2021 saw the highest proportion of optimists and the lowest proportion of pessimists

The percentage of people who believed that their personal situation would improve over the next five years rose to 31.9% in 2021, reaching the highest value observed so far. This growth followed the 1.4 percentage point drop that had brought the share below 30% (28.7%) in 2020, due to the many uncertainties that accompanied the first year of the pandemic. The attitude of growing optimism towards the future, probably also as a result of the start of vaccination campaign, was also confirmed by the decrease in the percentage of people who believed that their situation would worsen (down to 10.2% from 12.7% in 2020 - Figure 1).

If we broaden our view over a longer period, between 2012 and 2021, the assessment of future prospects shows an increase in the percentage of optimists in all age groups, although starting from very different values (Figure 4). The progressive reduction of those who state that their situation will worsen in the next five years is even more evident. The lowest value can be observed in 2021, when it was 13.4 percentage points lower than in 2012. The percentage of people who believe that the situation will remain the same is stable at around 30% over the past few years. Finally, a share of more than a quarter of the population, virtually unchanged since 2016, states that they do not know how to assess this.

Figure 4. People aged 14 and over by opinion on their future perspectives. Years 2012-2021. Percentages (a)



Source: Istat, Survey on Aspects of daily life
(a) The sum of the percentages for each year does not add up to 100 because a proportion of respondents did not indicate their opinion on their future perspectives.

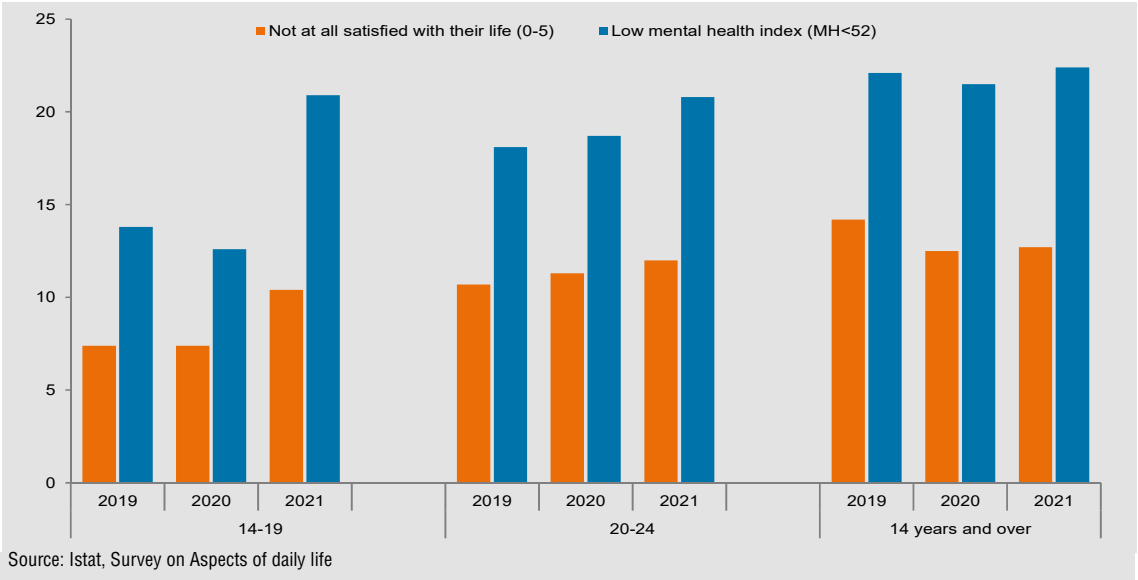
The assessment of future prospects is increasingly less positive as age increases. This was confirmed in 2021, with over 60% of 14-34-year-olds believing that their situation would improve in the next five years. This was followed by a clear gap of more than 18 percentage points between people aged 25-34 (60.4%) and those aged 35-44 (42.3%), down to 3.7% for people aged 75 and over.

The increase in the share of optimists in 2021 was largest among 25-34-year-olds, rising from 55% in 2019 to 60.4% (53.4% in 2020) and bringing them closer to the share of younger optimists.

Almost 220,000 young people between the ages of 14 and 19 felt unsatisfied with their lives and experienced poor psychological well-being

The fragile situation of young people became even more acute in the second year of the pandemic and also emerged from the analyses presented in other chapters of the Report[4]. In 2020, the decline in the percentage of very satisfied with life was only slight, but in 2021 it was accompanied by an increase from 7.4% to 10.5% in the proportion of 14-19-year-olds expressing a level of dissatisfaction with their life (rating between 0 and 5). The share of those expressing such a low rating also increased in 2021 among 20-24-year-olds, but with a smaller change, while it decreased in all other population groups.
The observed increase in the proportion of 14-24-year-olds who are dissatisfied with their lives (rating 0-5) was also accompanied by an increasing proportion of young people with poor mental health (mental health indicator score[5] below the first quintile of the distribution, i.e. 52 points). In fact, the percentage of adolescents with poor mental health conditions rose from 13.8% in 2019 to 20.9% in 2021; it also increased slightly among 20-24-year-olds, while it remained stable in the population as a whole (Figure 5).
The joint analysis of life satisfaction and mental health index showed that, among the teens who are dissatisfied with their lives, almost 60% have a MH score below the threshold that defines low psychological well-being; in 2019 this percentage was 44%. Therefore, while dissatisfied adolescents with a low mental health score were 3.2% of the total in 2019, in 2021 this percentage was doubled (6.2%), with approximately 220,000 14-19-year-olds dissatisfied with their lives and, at the same time, with a poor psychological well-being, indicating an increase in the precarious psychological situation.

Figure 5. People aged 14-19 and 20-24 who gave a score between 0 and 5 to their life satisfaction and have a score lower to the first quintile for the mental health index. Years 2019-2021. Percentages



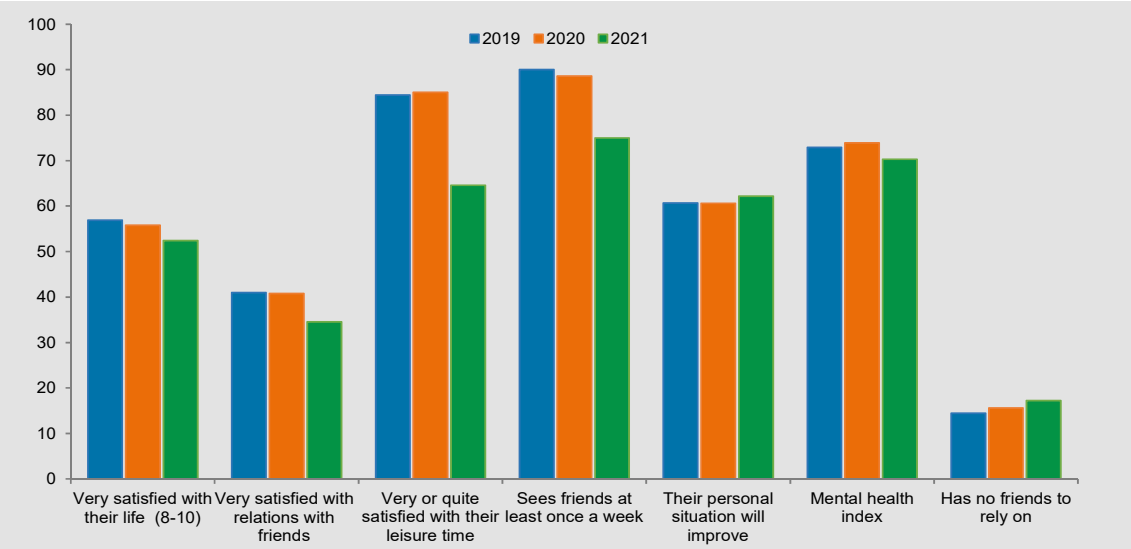
Source: Istat, Survey on Aspects of daily life

4 See chapters on Health, Education and training and Social relationships.
5 The MH score takes values between 0 and 100, where 100 indicates the best mental health condition.

Deterioration of adolescents' subjective well-being and social relationships

Cultivating positive friends relations is crucial for adolescents to develop their identity and quality of life.
A joint analysis of the trends in the indicators of Subjective well-being with those of psychological well-being and some indicators of Social relationships for 14-19-year-olds shows how their condition has been critical in the two years of pandemic. The fall in the percentage of very satisfied with life was in fact, as seen, accompanied by the fall in the average score on the mental health index, but also by the fall in leisure time satisfaction (19.8 percentage points less in 2021 than in 2019). Travel restrictions led to a 15-point decrease in the share of young people who saw their friends at least once a week in their free time, and more than twice as many as in previous years said they saw their friends only a few times a month (20.4%). Unlike leisure time satisfaction, the frequency with which they saw their friends decreased in 2020, but less markedly than in 2021. The percentage of those who said they had no friends they could count on in case of need also increased, rising to 17.2% among the youngest (it was 14.4% in 2019), while the share of those who said they were very satisfied with their friends relations fell by 6.5 percentage points (Figure 6).

Figure 6. Selected subjective well-being, psychological well-being and social relationship indicators for people aged 14-19. Years 2019-2021. Percentages and mean score (MH index)



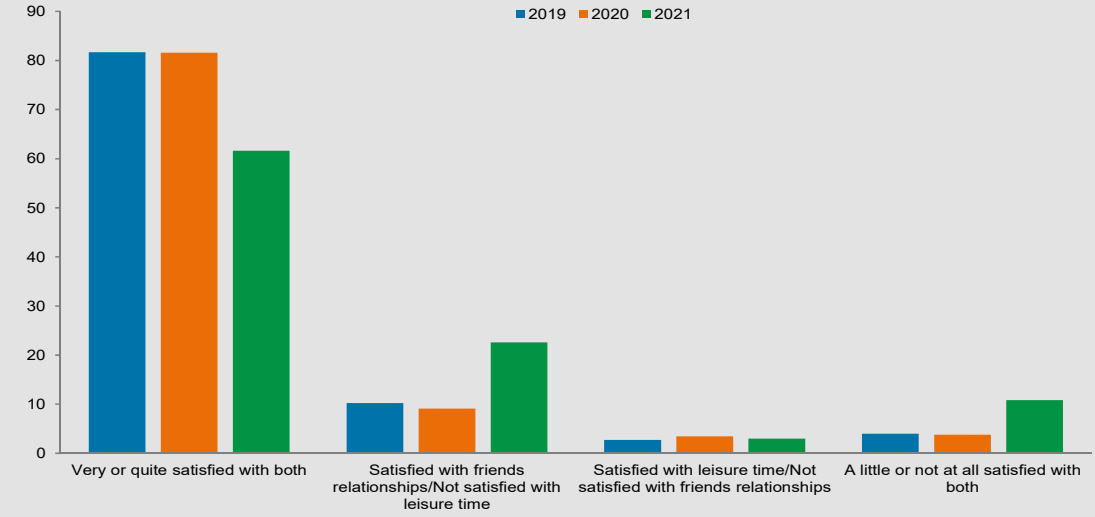
Source: Istat, Survey on Aspects of daily life

The share of adolescents satisfied with both leisure time and friends relations decreased

Leisure time satisfaction has always been closely correlated with satisfaction with friends relations over the years, with the majority of people aged 14 and over stating that they were very or fairly satisfied with both leisure time and friends relations. However, in 2021 the share of those satisfied with both aspects dropped to 50.1% from 63.1 in 2019, with an even more pronounced decline for the very young (14-19 years), among whom the share fell from 81.7% in 2019 to 61.6% in 2021 (Figure 7). In general, the share of people who

were satisfied with their friends relations but not satisfied with their leisure time increased, and among the very young the share more than doubled to 22.6%. The share of very young people satisfied with neither leisure time nor friends relations rose to 10.9%, more than doubling.

Figure 7. Satisfaction with leisure time and with friends relationships. Years 2019-2021. Per 100 persons aged 14-19 with the same characteristics

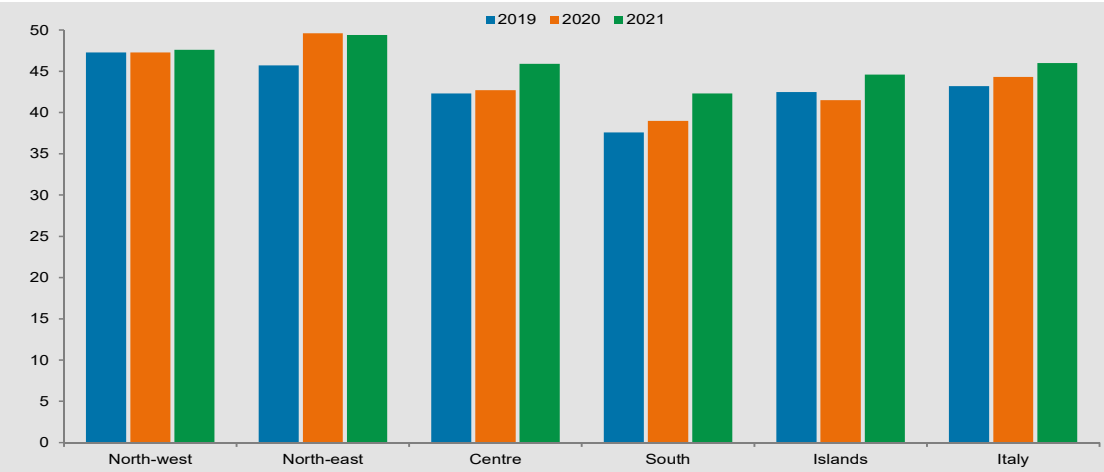


Source: Istat, Survey on Aspects of daily life

The North-west dropped behind comparing to previous years for subjective well-being indicators

In the North-west of the country, which was most affected by *COVID-19*, the percentage of those very satisfied with life did not increase in the two years of the pandemic, remaining at levels just above 47%, unlike in the other areas (Figure 8). Although the North remains the area with the highest share of very satisfied (48.3%), the gap with the South and Islands decreased from 7.5 percentage points in 2019 to 5.3 in 2021.

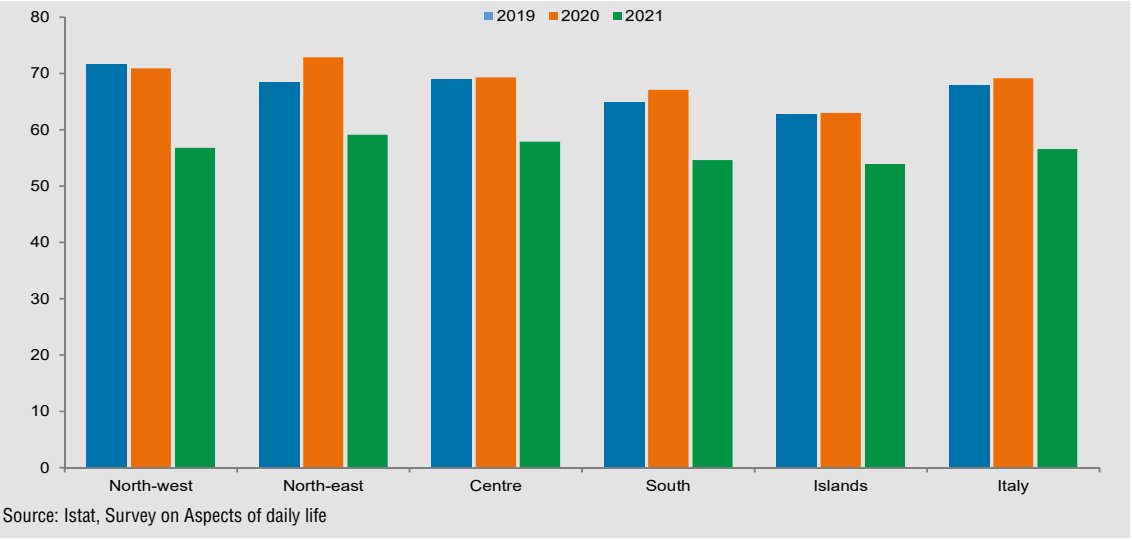
Figure 8. People aged 14 and over expressing a high score (8-10) of life satisfaction, by geographic area. Years 2019-2021. Percentages



Source: Istat, Survey on Aspects of daily life

In terms of leisure time satisfaction, the drop in 2021 was also particularly evident in the North: it fell by 14.2 percentage points compared to 2020 in the North-west, to 56.7%, and by 13.8 points in the North-east, to 59.1% (Figure 9). On the contrary, it was lower in the Islands (down 9.1 percentage points) although this area still recorded the lowest value (53.9% in 2021). Moreover, if the difference between the figure for men (59%) and that for women (54.3%) reached 4.7 points in 2021, the North-east recorded the greatest increase from 1.3 to 4.4 points, following the decrease of 15.3 points in the percentage of satisfied women. In this same territorial unit, the greatest increase in the number of satisfied people was recorded in 2020 compared to 2019, but the previous growth had a decelerating effect on the subsequent decline only for the male component.

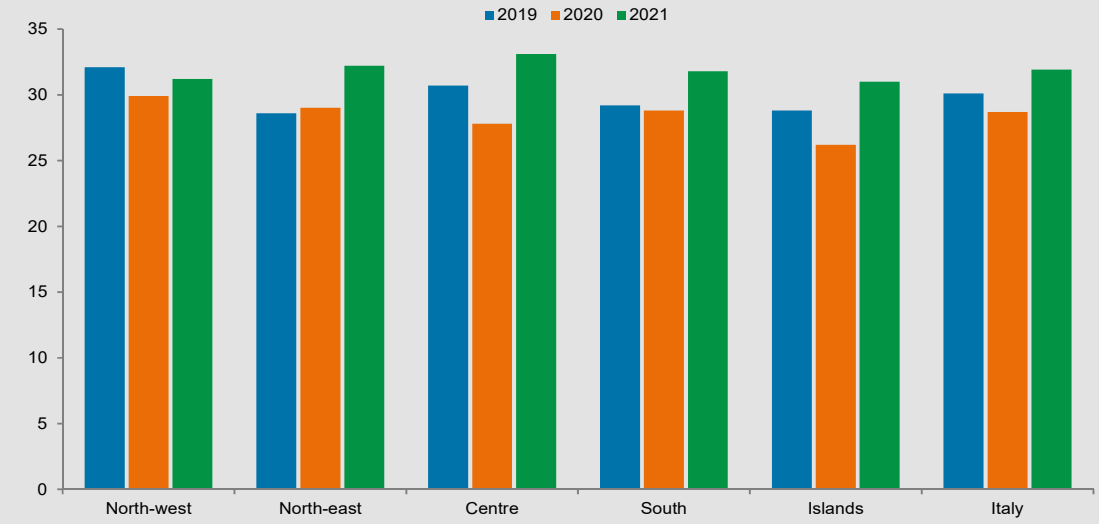
Figure 9. People aged 14 and over who say they are very or fairly satisfied with their leisure time, by geographic area. Years 2019-2021. Percentages



Source: Istat, Survey on Aspects of daily life

With regard to the assessment of one's own future prospects, in 2020 the highest value was in the North-west (29.9%), while in 2021 the increase in this area was only 1.4 points. It was therefore people resident in this geographical area, together with residents on the Islands, who showed the lowest levels of optimists (around 31%). At the same time, the Islands recorded the lowest level of pessimists (8.3%), while the highest percentage was recorded in the North-east (11.8%), particularly among women (12.8%). People living in the Centre were those who most frequently expressed an optimistic outlook (33.1%), an increase of 5.3 points compared to 2020 (Figure 10).
The territorial differences can also be explained by the gap between the evaluations expressed by men and women; in fact, we find the widest gender *gap* precisely in the North-west (5.8 percentage points less among women, compared to 4.0 points of difference for Italy as a whole), the lower percentage of optimists in this breakdown, therefore, seems to be largely due to the deterioration in the opinion expressed by women.

Figure 10. People aged 14 and over who think their situation will improve in the next 5 years by geographic area. Years 2019-2021. Percentages



Source: Istat, Survey on Aspects of daily life

Indicators

1. **Life satisfaction:** Percentage of people aged 14 and over very or quite satisfied with their leisure time on total population aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
2. **Leisure time satisfaction:** Percentage of people aged 14 and over very or quite satisfied with their leisure time on total population aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
3. **Positive judgement of future perspectives:** Percentage of people aged 14 and over that believe their personal situation will improve in the next 5 years on total population aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.
4. **Negative judgement of future perspectives:** Percentage of people aged 14 and over that believe their personal situation will worsen in the next 5 years on total population aged 14 and over.
   Source: Istat - Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Life satisfaction (a)	Leisure time satisfaction (a)
	2021	2021
Piemonte	45.6	56.2
Valle d'Aosta/Vallée d'Aoste	51.7	61.6
Liguria	46.0	56.7
Lombardia	48.5	56.9
Trentino-Alto Adige/Südtirol	60.8	66.1
Bolzano/Bozen	63.0	66.9
Trento	58.6	65.3
Veneto	48.5	59.1
Friuli-Venezia Giulia	49.2	56.8
Emilia-Romagna	47.7	58.1
Toscana	47.2	58.0
Umbria	43.4	57.7
Marche	44.4	60.5
Lazio	45.5	57.1
Abruzzo	45.9	58.3
Molise	45.5	59.0
Campania	40.6	51.9
Puglia	39.5	53.5
Basilicata	42.4	55.6
Calabria	49.6	59.7
Sicilia	43.2	52.6
Sardegna	48.7	57.9
North	48.3	57.7
North-west	47.5	56.7
North-east	49.4	59.1
Centre	45.8	57.9
South and Islands	43.0	54.2
South	42.2	54.4
Islands	44.6	53.9
Italy	46.0	56.6

(a) Per 100 persons aged 14 anni and over.

Positive judgement of future perspectives (a)	Negative judgement of future perspectives (a)
2021	2021
29.4	13.1
33.3	12.4
28.1	12.0
32.6	9.2
30.2	9.9
29.3	10.0
31.0	9.8
32.3	11.7
30.9	13.3
33.0	12.1
30.2	10.6
31.7	11.4
29.0	13.2
36.2	10.6
31.0	9.5
27.6	11.8
35.9	7.5
27.8	9.2
31.2	9.9
29.5	8.4
29.1	8.1
36.4	8.7
31.7	11.1
31.3	10.5
32.2	11.8
33.1	11.0
31.6	8.4
31.8	8.5
31.0	8.3
31.9	10.2

9. Landscape and cultural heritage[1]

The landscape and the historical and artistic heritage are common goods, and foundational assets of Italian identity, protected by the Constitution and the European Landscape Convention. However, the management of such an important heritage does not appear to be adequately supported by public finance, as the overall spending is lower than in other major European countries, poorly investment-oriented, and marked, at the local level, by strong inequalities, which penalise the regions economically less prosperous but equally rich in resources to be protected and enhanced.
The museum system, which faced an unprecedented reduction in visitors flow in 2020, has deployed strategies to allow remote access to its collections while promoting the training of new professional figures for the management and promotion of its assets. Agritourism farms, which also grew in 2020, are now a consolidated reality in support of rural development, guaranteeing the diversification of farmers' income and directly contributing to the protection of the territory.
Among the pressures affecting the landscape, illegal building rate continued to decline (though maintaining a significant incidence in the regions of Southern Italy), while the forest area destroyed by fires, which have become more frequent in Italy compared to the average of southern Europe, also increased in 2020.
In 2020-21 there was a decline in citizens' dissatisfaction with the landscape of the place where they live, perhaps mitigated by the rising of other forms of discomfort connected to the experience of lockdown or the rediscovery of possible alternatives to the usual place of residence. On the other hand, the concern about landscape deterioration remained stable, while most of the other environmental concerns were downsized during the pandemic.
The changes that await us in the near future, with the process of ecological transition and the implementation of the National Recovery and Resilience Plan (NRRP), represent a historic opportunity, first and foremost to strengthen public commitment to the protection and enhancement of the landscape and cultural heritage, but they also entail risks, which inevitably accompany the implementation of investment programmes of this magnitude and call for a renewal of the regulatory framework. The recent inclusion in the Constitution of the protection of the environment, biodiversity and ecosystems, which are placed alongside the landscape and the historical and artistic heritage in the text of Article 9, is a first step in this direction, affirming the need for an integrated approach to sustainable development, which includes the protection of the landscape and cultural heritage and the protection of the environment. In this approach, which must now take concrete form in the practice of planning at all levels, the landscape - the product of the interaction between nature and culture - becomes the most useful and functional category for interpreting the territory: no longer a catalogue of constraints but the matrix in which interventions must be placed and against which their sustainability must be assessed.

1 This chapter was edited by Luigi Costanzo and Alessandra Ferrara, with contributions from: Francesca Budano, Elisabetta Del Bufalo, Alessandra Federici, Antonino Laganà, Stefano Tersigni, Francesco G. Truglia and Donatella Vignani.

Three new entries on the UNESCO World Heritage List

In 2021, Italy regained the top spot on the UNESCO World Heritage List thanks to three new recognitions: the *14th-century fresco cycles of Padua*, the *Porticoes of Bologna* and the city of *Montecatini Terme* (part of the *Great Spa Towns of Europe* trans-boundary property). The number of Italian properties on the List has thus risen to 58, of which 53 belong to the cultural heritage category and five to the natural heritage category[2]. Italy was followed by China with 56 properties, Germany with 51, then by Spain and France with 49 (Figure 1a). Among the Italian cultural properties, 29 were classified as *cities* and eight as *cultural landscapes* [3]. Italy currently has 31 candidate properties, of which 19 cultural (including five cultural landscapes), nine natural and three mixed[4].

Figure 1a. Figure 1a. Properties inscribed in the Unesco World Heritage List, by criterion and country (first 20 countries by number of inscribed properties). Year 2021. Absolute values

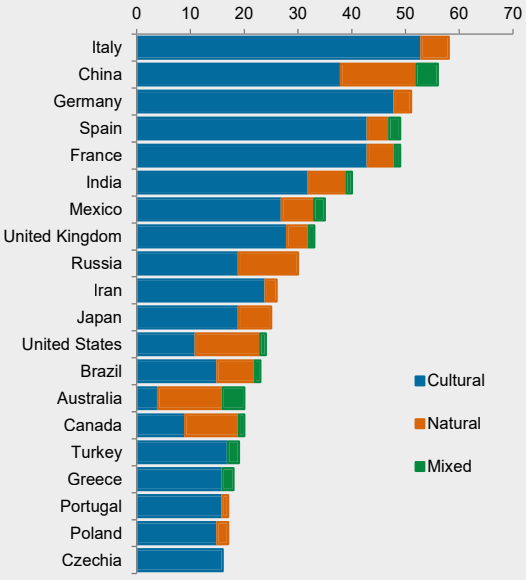
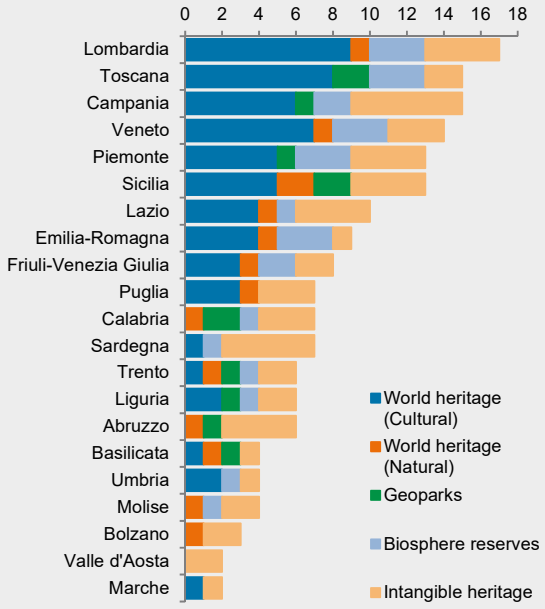


Figure 1b. Properties inscribed in the World Heritage List by criterion and other elements recognized by Unesco, by region (a)**. Year 2021. Absolute values**



Source: Istat, processing on Unesco and Ministry of culture data
(a) Elements located in more regions are counted more times. The Intangible cultural heritage "Falconry", which is not located in a specific territory, is not represented.

Italy is also very active in other UNESCO initiatives that contribute to the protection and enhancement of cultural heritage and landscape: Italy has so far obtained the recognition of 20 Biosphere Reserves (including, in 2021, that of *Monte Grappa* and the extension of that

2 The count includes seven trans-boundary properties, whose ownership is shared by Italy with other countries. There are 1,154 World Heritage List properties in 167 countries, of which 897 are cultural, 218 natural and 39 mixed (source: UNESCO, *World Heritage List* - data referring to 31/12/2021).

3 The theme of Cultural Landscapes was introduced in 1992, following a review of the criteria for selecting cultural heritage. The eight Italian Cultural Landscapes currently recognised are: *Amalfi Coast* (1997); *Portovenere, Cinque Terre and Islands* (1997); *Cilento and Vallo di Diano National Park, with the archaeological sites of Paestum, Velia and the Certosa di Padula* (1998); *Sacred Mountains of Piemonte and Lombardia* (2003); *Val d'Orcia* (2004); *Medici Villas and Gardens in Toscana* (2013); *Wine Landscapes of Piedmont: Langhe-Roero and Monferrato* (2014); *Prosecco Hills of Conegliano and Valdobbiadene* (2019).

4 Source: UNESCO, *World Heritage Tentative Lists* (data referring to 31/12/2021).

of the *Tuscan-Emilian Apennines*)[5], 11 Geoparks (including, in 2021, those of *Aspromonte* and *Majella*)[6] and 15 elements of the Intangible Cultural Heritage (including, in 2021, the *Truffle hunting and extraction in Italy, traditional knowledge and practice*)[7]. The territorial distribution of recognitions testifies to the extraordinary wealth and diversity of Italian cultural and landscape heritage, as all regions are represented with more than one item in the various UNESCO inventories (Figure 1b).

Public spending on landscape and cultural heritage far below the EU average

The resources allocated by public finance to the management of such a vast and widely spread heritage appear comparatively modest. In Italy, public spending on *cultural services* (which include the protection and enhancement of cultural heritage) was just over 5 billion Euro in 2019[8]. Among the other major EU economies, France and Germany spent much more (16.8 and 13.9 billion, respectively) and Spain also committed more resources (5.5 billion). Compared to the previous year, the amount spent by Italy decreased by 5%, compared to a 2.6% growth in the Union as a whole. Consequently, Italian public spending in this field remains among the lowest in Europe in relation to the Gross Domestic Product: 2.8 per thousand against an EU average of 4.8 per thousand. On the other hand, Italy ranked first in the Union for spending on the *protection of biodiversity and landscape* (2.1 billion Euro in 2019, against 2 in France and 1.8 in Germany)[9]. This item, however, is equivalent to just 1.2 per thousand of GDP and shows an overall downward trend over the last decade (Figure 2).

5 Biosphere Reserves (727 in 131 countries, united in the *World Network of Biosphere Reserves*) are areas that are home to terrestrial and/or marine-coastal ecosystems, managed in a way that combines the conservation of biodiversity with the sustainable use of natural resources for the benefit of local communities, through research, monitoring, education and training activities (source: UNESCO, *Man and the Biosphere Programme* - data referring to 31/12/2021).

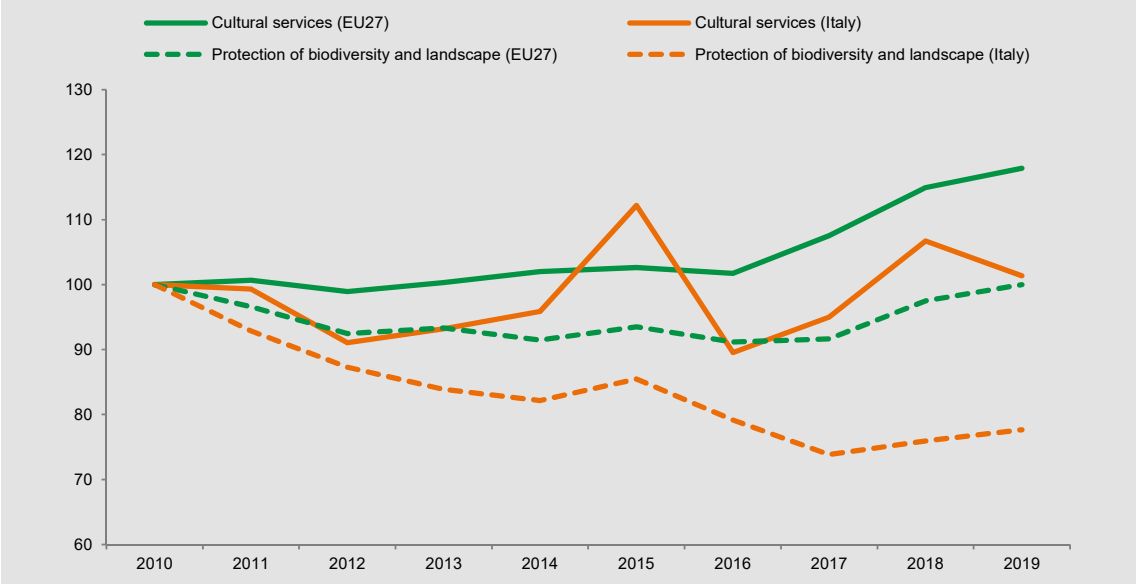
6 The UNESCO World Geoparks (169 in 44 countries, united in the *Global Geoparks Network*) are sites characterised by the presence of geological landscapes of particular value for their scientific interest, rarity and aesthetic or educational value, managed according to an integrated approach to the protection, promotion of knowledge and sustainable development of the territory (source: UNESCO, *UNESCO Global Geoparks* - data referring to 31/12/2021).

7 The Representative List of the Intangible Cultural Heritage of Humanity includes 630 elements in 140 countries, relating to one or more of the five domains of human creativity and diversity considered by the *Convention for the Safeguarding of the Intangible Cultural Heritage* (2003): oral expressions including language, performing arts, social practices, rites and festivals, knowledge and practices concerning nature and the universe, traditional crafts (source: UNESCO, *Representative List of the Intangible Cultural Heritage of Humanity* - data referring to 31/12/2021).

8 General government expenditure for class 08.2.1 of the International Classification of Public Expenditure by Function (Cofog).

9 General government expenditure for class 05.4.1 of the International Classification of Public Expenditure by Function (Cofog).

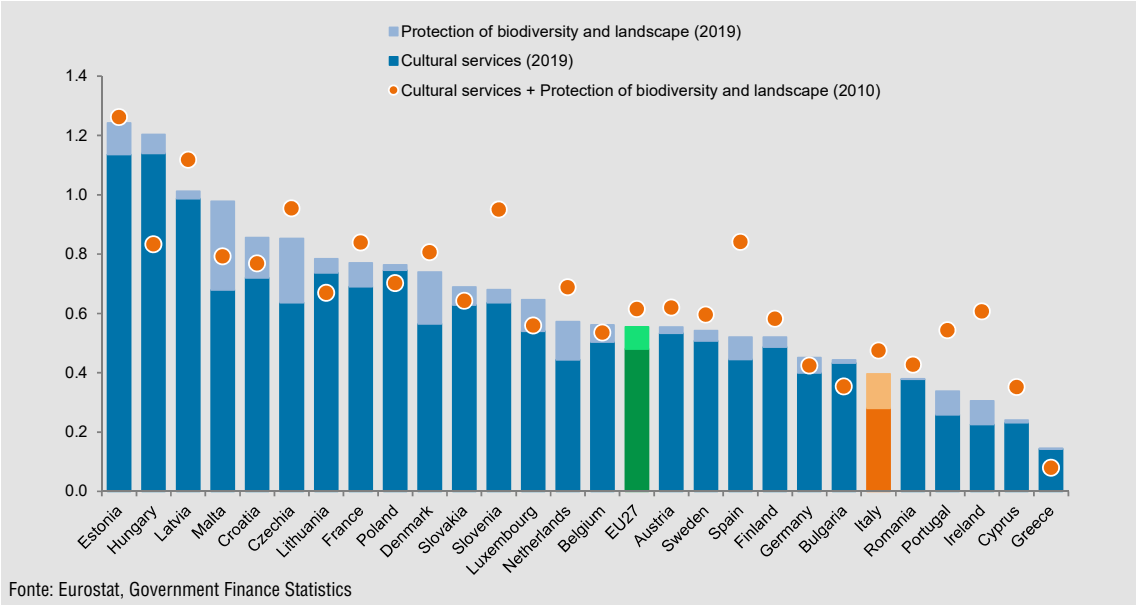
Figure 2. Public expenditure on Cultural services and Protection of biodiversity and landscape in Italy and EU27. Years 2010-2019. Index, 2010=100



Source: Eurostat, Government finance statistics

In a ranking of public spending on landscape and cultural heritage, formed by relating the sum of both expenditure items to GDP (which in any case define an area of intervention that is much broader than that strictly referable to the scope of protection and enhancement), Italy ranks only 22nd among the 27 countries of the Union. Moreover, in 2019, like most Member States, Italy spent a lower fraction of its GDP on cultural services and the protection of biodiversity and landscape than in 2010 (Figure 3).

Figure 3. Public expenditure on Cultural services and Protection of biodiversity and landscape in EU countries. Years 2010 and 2019. Percentage of GDP

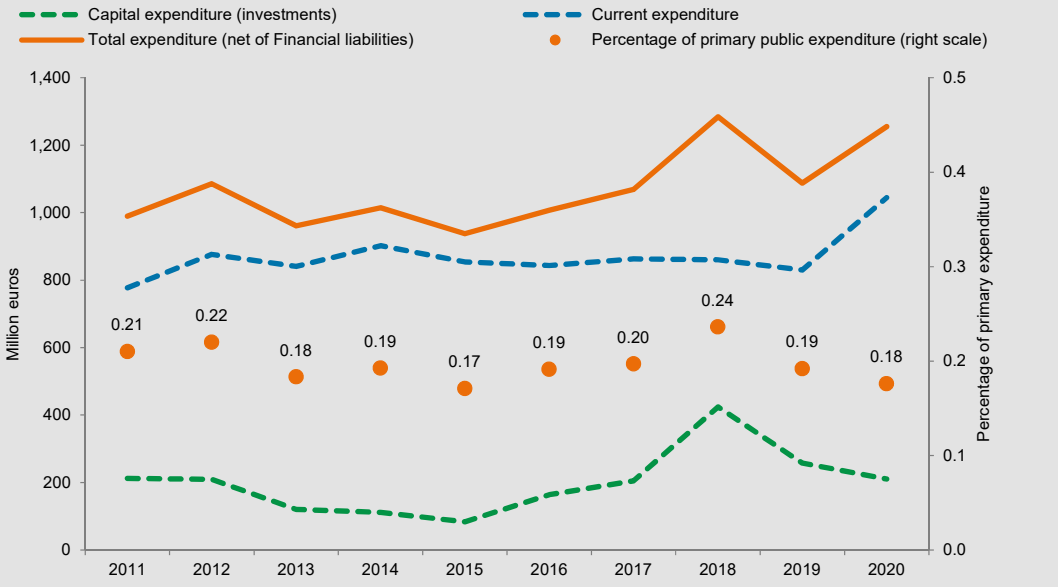


Fonte: Eurostat, Government Finance Statistics

Less investment and more current expenditure for culture and landscape in the State Budget

The classification of public expenditure by missions makes it possible to identify an aggregate related to the management of cultural heritage and landscape more precisely in the State Budget[10]. In 2020, the exceptional expansion of primary expenditure linked to the impact of the pandemic also affected State expenditure for the *Protection and Enhancement of Cultural and Landscape Heritage and Activities* mission, which grew by 15.4% compared to the previous year, reaching the amount of 1.26 billion Euro[11]. This increase, however, only partially makes up for the drop recorded in 2019 and, unlike the previous increases that occurred between 2015 and 2018, is not due to a growth in investments (budgeted as capital expenditure), but to a considerable increase in current expenditure (+25.8%, Figure 4)[12].

Figure 4.Primary government expenditure on Protection and enhancement of cultural and landscape heritage and activities (a) by category. Years 2011-2020. Million euros and percentage values



Source: State general accounting office (RGS)
(a) Payments made by the Central administrations under the Mission 021 of the Government budget, net of programmes 021002, 021017 e 021018, funding the performing arts sector and the so-called "Culture bonus".

10 This aggregate corresponds to the Mission 021 of the State Budget, net of the Programmes 021002, 021018 (relating to the entertainment sector) and 021017 (so-called "Culture Bonus"). It is not comparable with the sum of expenditure for *Cultural Services* and *Protection of Biodiversity and Landscape*, which includes a broader scope of activities and refers to the classification of expenditure by functions (Cofog), used in international comparisons. Moreover, in the international comparison the total expenditure of Public Administration is taken into account and not only that of the Central Government.

11 Accrued payments of the Central Government, net of repayments of financial liabilities.

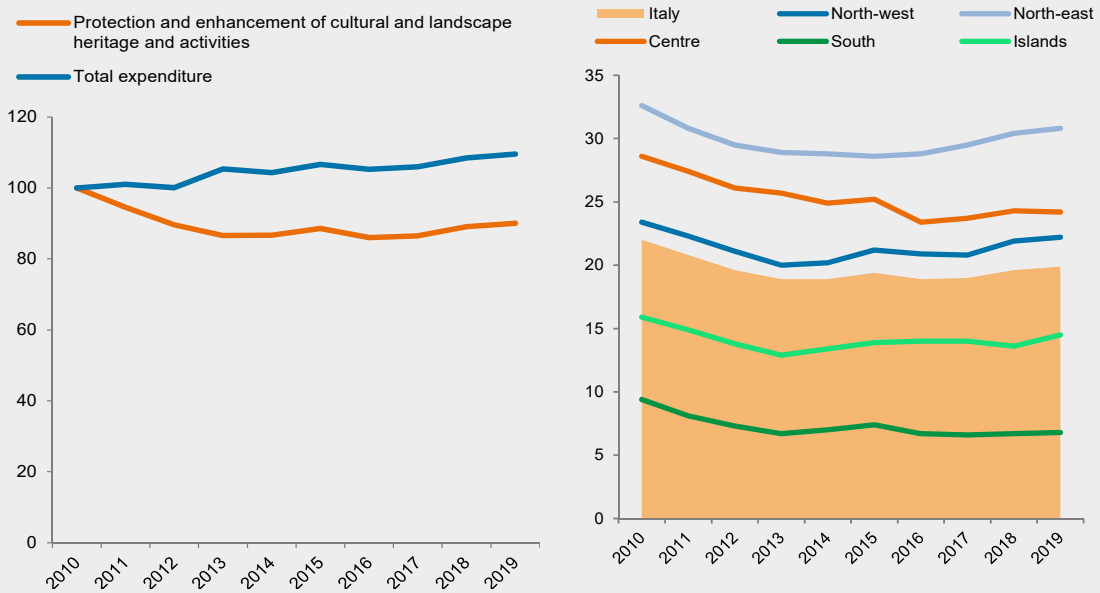
12 Compared to 2019, current expenditure for the *Enhancement of the cultural heritage and coordination of the museum system and Coordination and direction for the safeguarding of the cultural heritage*, in particular, almost doubled (+89.2% overall). The growth in current expenditure for the Mission 021 is in line with the expansion of primary State expenditure recorded in 2020 (+26%, compared to an average increase of 1.5% over the previous five years), to which, however, a strong increase in capital expenditure also contributed.

Expenditure of Municipalities for culture recovers ground, but the North-south gap remains wide

In 2019, the current expenditure of municipalities for the management of cultural assets and activities continued to climb the slope after the low reached in 2016, standing at 19.9 Euro *per capita* (0.3 more than the previous year)[13]. In recent years, at the national level, the trend of this expenditure item follows that of overall expenditure: the share allocated to culture in the budgets of Municipal Administrations, therefore, remained unchanged, standing at 2.8% since 2013 after having been reduced in previous years (Figure 5a). At the territorial level, the differences remained very wide: compared to the previous year, in fact, *per capita* spending increased in all geographic areas (except the Centre), leaving a picture of strong inequalities substantially unchanged. At the two extremes we find the municipalities of the North-east,

Figure 5a. Current expenditure of Municipalities (a)**, in whole and on Protection and enhancement of cultural and landscape heritage and activities** (b)**. Years 2010-2019. Index, 2010=100**

Figure 5b. Current expenditure of Municipalities (a) **on Protection and enhancement of cultural and landscape heritage and activities** (b) **by geographic area. Years 2010-2019. Euros per capita**

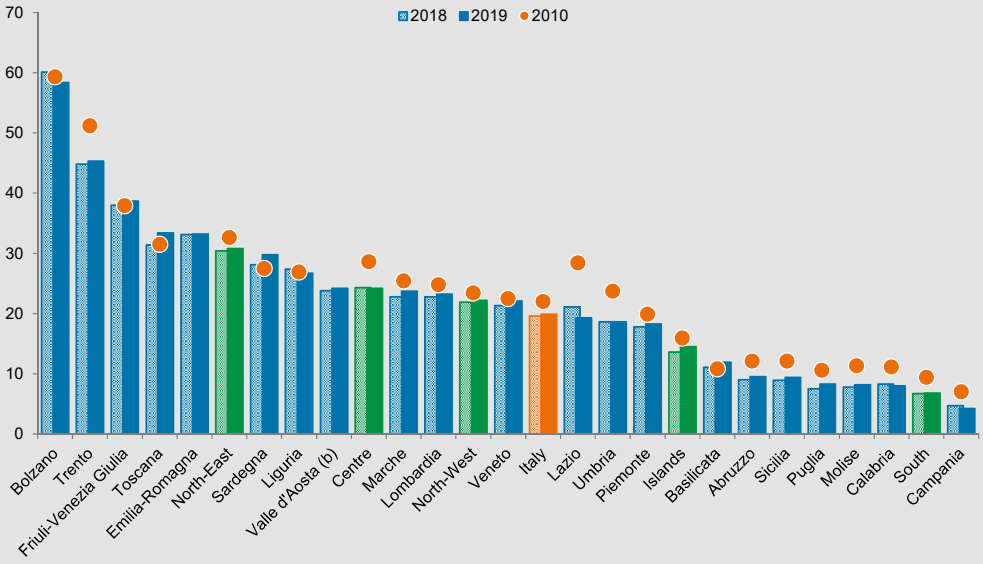


Source: Istat, Final balance sheets of Municipalities, Provinces and Metropolitan areas
(a) Payments made by Municipal administrations.
(b) Until 2015, Functions relating to culture and cultural heritage.

which spent an average of 30.8 Euro *per capita* (over 50% more than the Italian average), and those of the South, which spent only 6.8 (about one-third of the Italian average, Figure 5b). The gaps increased at the regional level, where the highest value (58.4 euro *per capita* in the autonomous province of Bolzano) was 14 times higher than the lowest (4.2 euro *per capita* in Campania). Among the regions with ordinary statutes, Toscana and Emilia-Romagna were in the top positions with 33.4 and 33.2 euro *per capita* respectively, while all the southern regions, except Sardegna, were well below the Italian average (Figure 6).

13 The indicator considers current expenditure (accrual payments) for *Protection and Enhancement of Cultural and Landscape Heritage* (until 2015, expenditure for *Functions related to culture and cultural heritage*).

Figure 6.Current expenditure of Municipalities on Protection and enhancement of cultural and landscape heritage and activities (a) **by region and geographic area. Years 2010, 2018 and 2019. Euros per capita**



Source: Istat, Final balance sheets of Municipalities, Provinces and Metropolitan areas
(a) Payments made by Municipal administrations (in 2010, expenditure on *Functions relating to culture and cultural heritage*)
(b) 2010 data not available.

In 2020 more than 90% of museums were open for at least part of the year

In 2020, 3,924 permanent exhibition facilities (-19.6% compared to the previous year) were open to the public at least for part of the year (1.3 museums and galleries, archaeological areas and parks, monuments and monumental complexes every 100 km^2). These welcomed more than 36 million visitors (-72.3% compared to the previous year) during the periods not subject to the pandemic containment restrictions[14]. The impact of the pandemic was therefore severe, even though 92.0% of the structures guaranteed physical access for visitors for at least part of the year and about 30% made it possible to enjoy the collections through virtual tours[15].

Italy is historically characterised by a capillary diffusion of museum structures (more than a third of which are located in municipalities up to 5,000 inhabitants and almost 40% also in areas of difficult access)[16] but also by a strong concentration of flows: only 12.0% of structures are located in metropolitan cities, which nevertheless welcomed 43.0% of visitors in 2020, while about 70% were concentrated in "pole" municipalities, which are more accessible[17]. It is therefore evident how the infrastructure deficit contributes to limiting the

14 The total number of museum facilities, including those that in 2020, due to *COVID-19*, carried out only administrative or online activities, without any in-presence service for the public, was 4,265.

15 Through the activation of virtual tours, guided video-visits and/or alternative ways of visiting the museum/institution. 14.0% of the facilities also made the catalogue of their collections available online in digital format; 23.9% provided online services such as workshops, training courses, seminars, etc.; and 39.1% activated online services of interaction and involvement of the public such as video interviews, in-depth examinations of the collections, streaming meetings, etc.

16 *Intermediate, peripheral and outermost* municipalities according to the classification of Inland Areas adopted by the Italian Agency for Territorial Cohesion.

17 According to the classification of Internal Areas adopted by the Italian Agency for Territorial Cohesion.

fruition of a significant part of the museum heritage. In 2020, the indicator of density and importance of museums' heritage presented a less concentrated territorial distribution than in 2019 (Figure 7)[18].

Of the seven regions that were above the average value (1.3 per 100 km^2), those traditionally most visited by international tourism (Lazio, Toscana, Campania and Veneto) recorded the greatest losses. Within this quite exceptional framework, the regions of the North-east (in particular the autonomous province of Trento and Friuli-Venezia Giulia) and Valle d'Aosta seem to have held up better, maintaining comparatively high values for the indicator and positive changes compared to the previous year. The recovery of flows expected in the next few years should be accompanied by a redistribution strategy to enhance the value of minor centres, and reduce anthropic pressure on the great "magnets" of international tourism. Some of the initiatives for the presentation of facilities already implemented in 2020 go in this direction: the museums have activated at least one online activity for users by making use of internal staff who already had the necessary skills (in 85.4% of cases), investing in training (11.7%) or hiring new resources (24.3% of cases). They plan as a priority the recovery and strengthening of the relationship with the public in presence through integrated tickets, promotions or facilitated access (29.2% of facilities) and they plan to invest in the organisation of flows and safe access (12.2%).

Figure 7a. Density and importance of the museum heritage (a) by region and geographic area. Years 2019 and 2020. Museums and similar facilities weighted by the number of visitors per 100 km^2

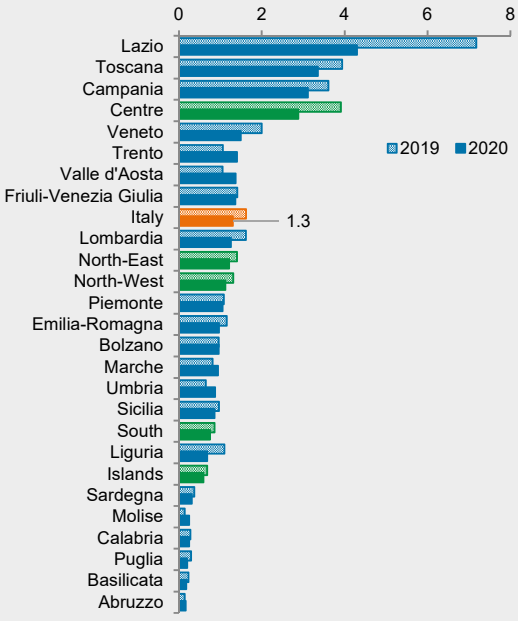
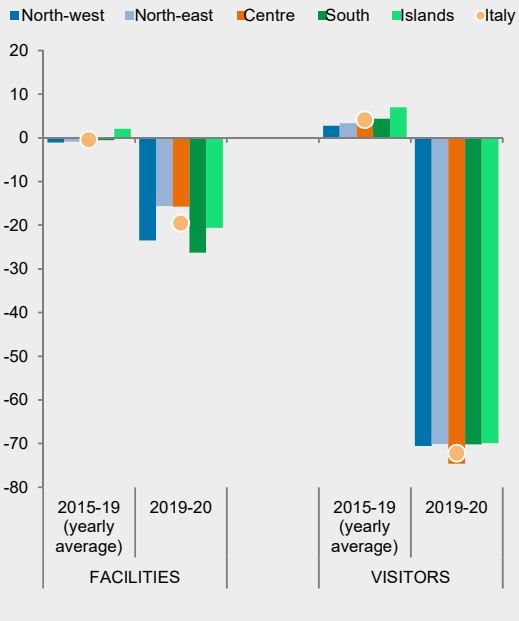


Figure 7b. Museum facilities and visitors by geographic area. Years 2015-2019 and 2019-2020. Percentage change



Source: Istat, Survey on museums and other cultural institutions.
(a) Museums and galleries, archaeological sites and parks, monuments and monumental complexes.

18 The indicator is calculated as a territorial density weighted by the number of visitors. For the formula, see the definition of the indicator at the end of the chapter.

Rural tourism facilities continued to grow despite the pandemic

The farms practicing rural tourism formed an important sector of the agricultural economy in 2020, numbering more than 25,000 units (+2% compared to 2019) even though, as a result of the travel restrictions imposed by the pandemic, there has been a significant drop in the movement of tourists (- 41.3% compared to 2019). The positive trend has continued for more than ten years (at a rate of 2.3% on average per year), accompanied by a diversification in the range of services on offer. In particular, in 2020, farms organising activities related to proximity tourism experienced an increase (wine tasting +7.6%; horse riding +1.8%; excursions +2.4%, trekking +5.8%; mountain biking +2.8%, classes +16.3%). It is precisely the versatility of these activities, permitted by a legislation that aims at promoting the diversification of farmers' income, that has helped to qualify the offer of rural tourism over time[19]. A further incentive for the growth of agritourism, with potentially positive effects on the rural landscape, may come from the NRRP's investment line dedicated to the *protection and enhancement of rural architecture and landscape*, which finances the eco-sustainable recovery and rehabilitation of degraded or abandoned rural buildings. In 2020 there were 8.3 rural tourism facilities per 100 km^2, of which over 30% in mountain areas and over 50% in hill areas, with at least one presence in 63.0% of Italian municipalities (and 84.1% of municipalities in the Centre). The number of the farms that practice rural tourism is growing in all the geographic areas except the Islands and particularly in

Figure 8a.Spread of rural tourism facilities by region and geographic area. Year 2020. Average number of farmhouses per 100 km^2

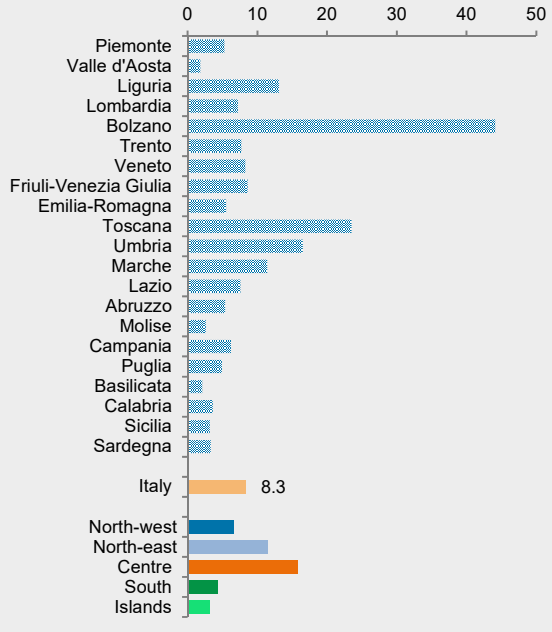
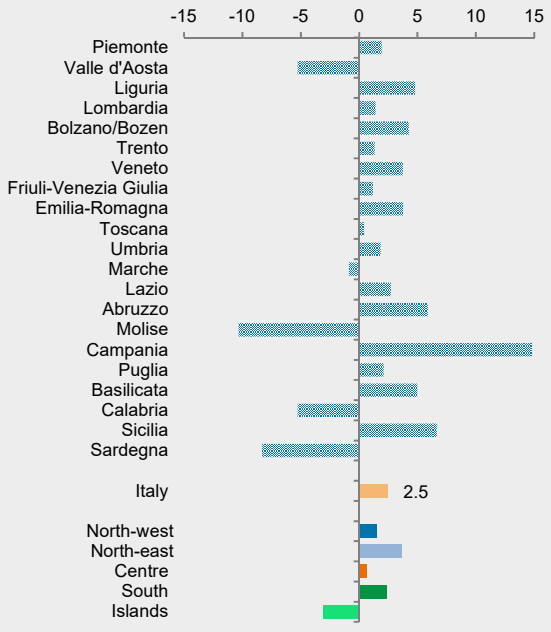


Figure 8b.Rural tourism facilities by region and geographic area. Years 2019-2020. Percentage changes



Istat, Survey on farmhouses

19 The current Regulations on agritourism (Law No 96/2006) allow this activity to be carried out only on farms, "in connection with land cultivation, forestry and animal breeding activities" (Article 2). The previous Framework Law (no. 730/1985) added that agricultural activities "must, in any case, remain the predominant ones", while the law of 2006 made this constraint less stringent, entrusting the Regions with the definition of "criteria for assessing the connection relationship between agritourism activities and agricultural activities, which must remain predominant" (Article 4).

the North-east (+3.5%), where there is also a high territorial density (11.5 facilities per 100 km^2). In the Centre, where density is highest at just under 16 facilities per 100 km^2, the phenomenon seems to be stabilising. In this particular year, in the South, where density is still far from the national average, a growth of 3.4% was observed (Figures 8a and 8b).

Progress made in the National Register of Historic Rural Landscapes

Five new sites were entered in the National Register of Historic Rural Landscapes and Traditional Agricultural Practices in 2021: two in Emilia-Romagna (*La Corona di Matilde-Alto Reno terra di castagni* and *Praterie e canali irrigui della Val d'Enza*), one in Veneto (*Colline terrazzate della Valpolicella*), one in Toscana (*Paesaggio collinare policolturale di Pienza e Montepulciano*) and one in Molise (*Il paesaggio del grano-Area cerealicola di Melanico*). In addition, the traditional practice of *Irrigazione tramite sistema di rogge "Waale" sulla Landa di Malles* (autonomous province of Bolzano) has been registered. Currently, 27 historical rural landscapes in 12 regions, with a total area of more than 126,000 hectares, and four traditional agricultural practices are inscribed in the Register. In terms of landscapes, the most represented regions are Toscana (with six sites totalling 32 thousand hectares), Veneto (four sites totalling 30 thousand hectares) and Lazio (four sites totalling 21 thousand hectares)[20].

Funds for *Borghi* and historic green spaces from the NRRP

The NRRP assigned 6.68 billion Euro to relaunch the culture and tourism sectors, equal to 16.6% of the funds of the entire Mission 1 (*Digitisation, Innovation, Competitiveness, Culture and Tourism*)[21] and 3.5% of the entire amount of the *Recovery and Resilience Facility* assigned to Italy. A first line of activities, of particular interest for the analysis of the relations between well-being and cultural heritage, was addressed to the enhancement of historical and cultural sites with the aim of improving their attractiveness, safety and accessibility, with specific attention to the protection and enhancement of minor historical centres, namely the so-called *Borghi* (474 in 2020-21, considering the realities certified by the two main initiatives)[22]. The potential of minor centres is witnessed by the distribution of the museum system: over 50% of the exhibition facilities open to the public are located in municipalities with up to 10 thousand inhabitants, and over 16% of the museums and 25% of the archaeological areas in *peripheral* or *outermost* municipalities according to the

20 The Register is kept by the National Observatory for Rural Landscapes, established at the Ministry for Agricultural, Food and Forest Resources (Mipaaf) in 2012. Entries in the Register are made following the evaluation of applications made by local players and can be revoked when the characteristics that motivated them no longer exist (source: Mipaaf, *Rete rurale nazionale* - data referring to 31/12/2021).

21 Mission 1, Component 3 - *Tourism and Culture 4.0*.

22 Reference is made to Mission 1, Component 3, Investment 2.1 of the NRRP (*Attractiveness of Borghi*). The small towns that were awarded the *Orange Flag* certification by the Italian Touring Club were 247 (June 2020), those qualified among the Italy's most beautiful Borghi by the association of the same name were 334 (February 2022). The TCI awards *Orange Flags* to places with a valuable historical, cultural and environmental heritage offering quality tourist accommodation. The association of *Italy's Most Beautiful Borghi* has been promoted since 2001 by ANCI's Tourism Council and includes municipalities that apply policies to preserve their historical and cultural heritage, limit new artificial surfaces, maintain traditional agricultural practices alive and focus on sustainability. Both initiatives only consider for certification municipalities with up to 15,000 inhabitants (and, in the case of *Orange Flags*, only if located in the hinterland).

classification of inland areas.
Another important component of the diffuse landscape and cultural heritage, which is also the subject of a funding line under the NRRP[23], is urban greenery and, in particular, historic green areas[24]. This important and fragile part of the cultural heritage, referred to in the Plan as a "hub of public beauty and identity places for urban communities", contributes to the green endowment of most provincial and metropolitan city capitals and, overall, accounts for more than 12% of it (over 67 million m^2). These are villas, gardens and parks of artistic or historical interest, with features of uncommon beauty permeated into the urban fabric, which represent a distinctive feature of the urban landscape of Italy.

Pressure from mining and quarrying activities rose before the pandemic

The slowdown in economic activity caused by the pandemic had a limited effect on mining and quarrying activities: according to provisional estimates of Material flow accounts, in 2020 domestic extraction of non-energy minerals decreased by 5.9% in Italy and even less in the EU as a whole (-1.5%)[25]. In the previous year, the survey on the activity of quarries and mines recorded an increase in extracted volume[26], which reached the proportion of 287 m^3 per km^2 (+7.6% compared to 2018, marking a reversal of the negative growth in 2013-2017). Lombardia was the region with the highest extraction intensity (559 m^3/km^2), followed by Umbria (491) and Molise (428), but values more than one third above the national average were also found in Veneto and Puglia (Figure 9b). Generally speaking, the intensity of extraction tends to decrease along the North-south axis (from 398 m^3 per km^2 in the North-west to 191 in the Islands, Figure 9a), but the increase in extracted volume was found in all regions except those of the Centre. Other significant increases (between 20 and 25% compared to 2018) were observed in Sardegna, Campania and Sicilia, while Friuli-Venezia Giulia was the only region to record a sharp reduction in extracted volume (- 26.1%). Mining and quarrying activities also have a significant impact on the landscape due to the spread of extraction sites, the vast majority of which are quarries (3,475, compared to 93 mines). On average, there are 1.2 active sites (quarries and mines) per 100 km^2 throughout Italy, but more than 1.5 in Trentino-Alto Adige, Marche, Puglia and Lombardia, and almost two in Veneto.

23 In Mission 1, Component 3, investment line 2.3: *Programmes to enhance the identity of places: historic parks and gardens* have as their objective "the action of knowledge and recovery of Italian historic parks and gardens with a view to their proper maintenance, management and public enjoyment" (...) due to the "relevance of the public function that these assets, like other places of culture, play and can play in the context of community life in terms of well-being, social inclusion and economic benefits".

24 Green areas bound under the Cultural Heritage and Landscape Code (Legislative Decree 42/2004 as amended).

25 Source: Eurostat, *Environmental Statistics: Material Flow Accounts*. The indicator considers domestic extraction of non-energy, metallic and non-metallic minerals (in tonnes).

26 Like the indicator used for international comparison (based on estimates of material flows), the Bes indicator is a measure of extraction intensity but considers the volume of materials extracted rather than their mass.

Figure 9a. Pressure from mining and quarrying activities by geographic area. Years 2013-2019. m3 of mineral resources extracted per km²

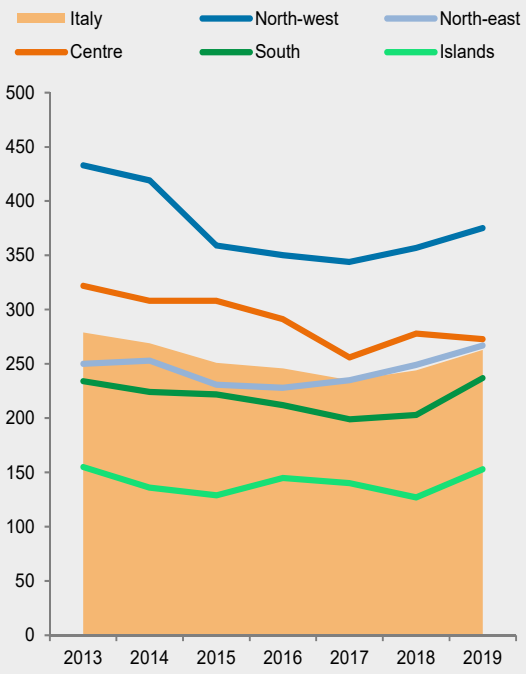
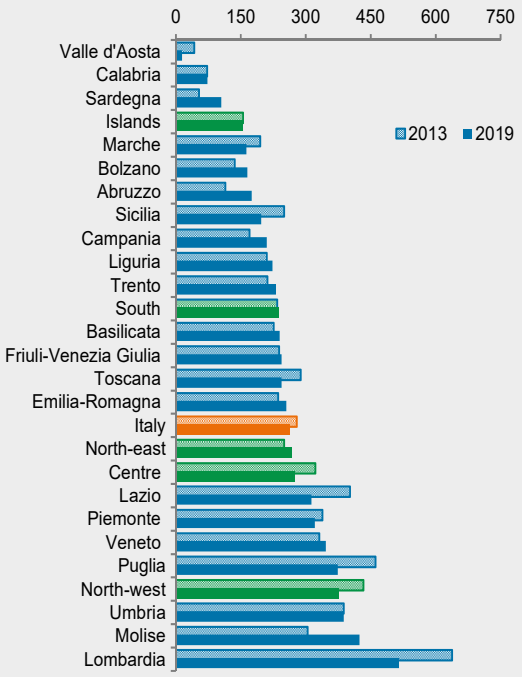


Figure 9b. Pressure from mining and quarrying activities by region and geographic area. Years 2013 and 2019. m³ of mineral resources extracted per km²



Source: Istat, Anthropic pressure and natural hazards. Mining and quarrying extraction activities

Weather and climate conditions favoured an increase in forest fires in 2020

The cyclical trend in forest fires (Figure 10) is naturally affected by the variability of weather and climate conditions. In 2020, the forest area affected by fires in Italy was equal to 1.8 per thousand of the national territory. The value, growing for the second year in a row, was recorded in a year characterised by higher temperatures and lower than average rainfall (about +0.3 °C and -132.1 mm compared to 2006-2015)[27]. The problem was shared with other European countries, particularly in the Mediterranean area, among which only Portugal and Croatia recorded a higher incidence of areas affected by fire in 2020 (7.3 and 4.2 per thousand of the national territory, respectively). Even in 2020, however, the impact of forest fires remained much lower than the average of the 2010-2019 decade[28], which was affected by the peaks recorded in 2012 and 2017. The phenomenon, which sees Italy among the most exposed in Europe, can be contained through proper management of agricultural and forest areas and awareness-raising among the population. The number of fires (4,865 in 2020) and the causes reported (only 2% attributable to natural phenomena such as lightning and the remainder to human activity: agricultural practices, hunting and recreation, as well as malicious actions)[29] describe an overall picture of low attention and awareness. At the national level in 2020, fires affected about 56,000 hectares of forest are-

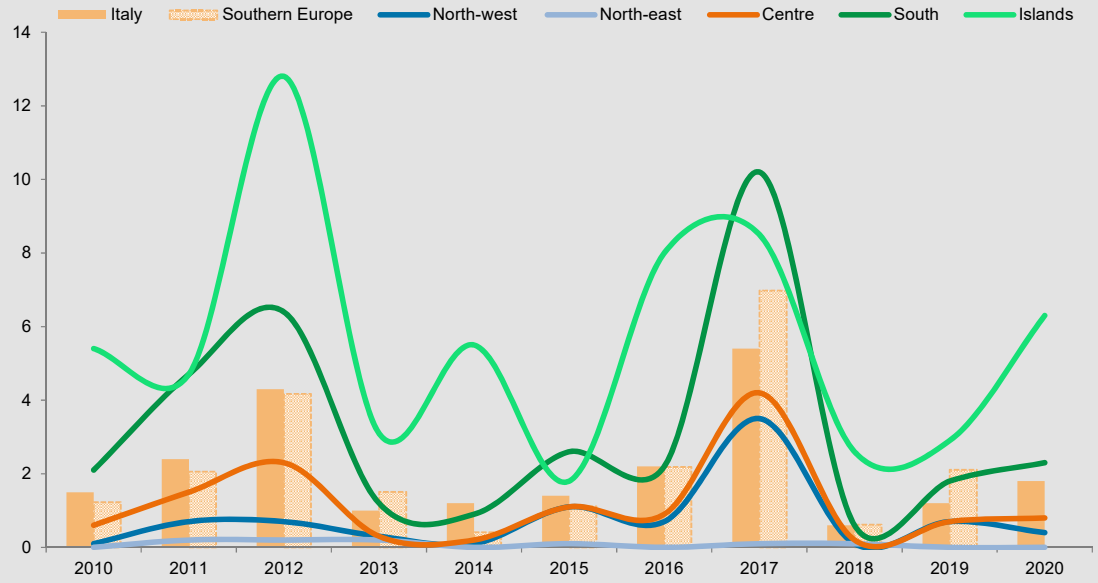
27 Source: Istat, Meteoclimatic and Hydrological Data Collection. Average 2020 difference measured for regional and metropolitan capital cities.

28 Source: Joint European Research Centre, *European Forest Fire Information System* (Effis).

29 Source: Comando Carabinieri Tutela Forestale, Forest Fire Information Unit.

as, almost 90% of which were located in Southern Italy (56.5% in the Islands, 31% in the South). The impact was significant and manifested itself both directly, in terms of destroyed or damaged ecosystems[30], and indirectly, in terms of the loss of ecosystem services: at the regional level, the highest values were recorded in Sicilia (more than 9 per thousand of the regional territory), Campania, Sardegna and Calabria (between 3 and 4 per thousand).

Figure 10. Area covered by forest fires in Italy by geographic area and in Southern Europe. Years 2010-2020. Km² per 1,000 km² of total land area



Source: State Forestry Corps and Civil Defence (Italy 2005-2015), Carabinieri Command of Units for Forestry, Environmental and Agri-food protection (Italy 2016-2020) and Istat, processing on JRC-EFFIS data (Southern Europe).
(a) Albania, Bosnia and Herzegovina, Bulgaria, Cyprus, Croatia, Greece, Italy, North Macedonia, Malta, Montenegro, Portugal, Romania, Serbia, Slovenia, Spain. 2020 data not available.

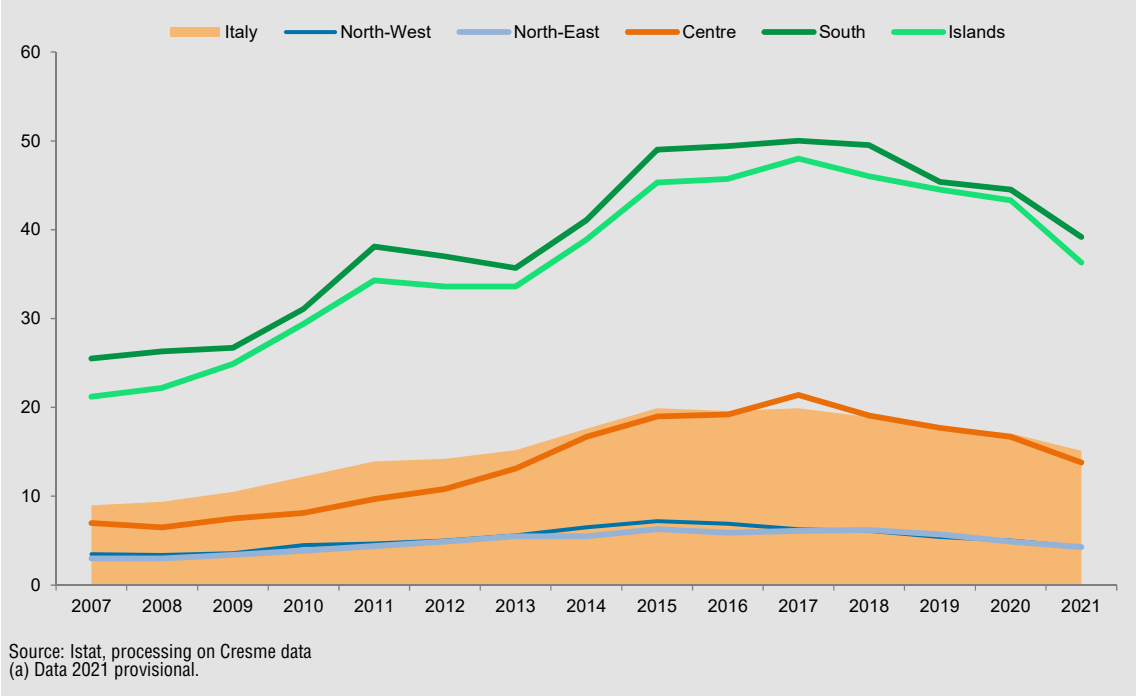
Illegal building in decline also in 2021, but the situation remained critical in Southern Italy

Estimates for 2020 and 2021 confirm the positive trend of the illegal building rate, which has been falling since 2018 after a ten-year growth phase. In 2021 the ratio was 15.1 illegal new houses every 100 authorised, still high but moving away from the levels reached in 2015-2017 when new illegal houses were estimated at about 20% of the authorised ones[31]. The downward trend is consistent in all the geographic areas, but the territorial differences are extremely marked: in fact, the phenomenon of illegal building is concentrated above all in the South and the Islands (where it maintains alarming levels, with a rate ranging between 35 and 40) and is present to a not negligible extent in the regions of the Centre (where the rate is close to the Italian average), while it can be considered marginal in those of the North (Figure 11).

30 Ecosystems are homogeneous ecological units that generate regulation (water, atmospheric gases, climate, erosion, etc.), supply (food, raw materials, biological variability, etc.) and cultural (aesthetic, recreational, identity values, etc.) ecosystem services. The time to restore them to their pre-deterioration ecological conditions is in the order of a hundred years and their destruction potentially irreversible.

31 The 2021 data are provisional. The unauthorised building rate is a flow measure referring to housing construction, which expresses the proportion of unauthorised buildings built in the reference year in relation to those authorised by the municipalities. Therefore, it does not represent the share of unauthorised buildings in the total number of buildings built in the reference year (nor, indeed, in the stock of buildings).

Figure 11. Illegal building rate by geographic area. Years 2007-2021 (a)**. New unauthorised housing units every 100 authorised**



Source: Istat, processing on Cresme data
(a) Data 2021 provisional.

The continuity of the downward trend over the last two years, indifferent to the impact of the pandemic on the construction sector, can be considered a further positive signal, given that the rise observed between 2007 and 2015 (from 9 to 19.9 unauthorised new houses every 100 authorised) had occurred in the context of a crisis of housing production[32]. In any case, concern remains about the situation in Southern Italy, where a significant share of building activity continues to take place in partial or complete illegality, producing degradation of the landscape, seismic and hydrogeological risk, and irregular employment.

The pandemic reduced the perception of degradation but not the concern for the landscape

The percentage of people that are not satisfied with the quality of landscape of the place where they live, which for the majority of the population is identified with urban space, continued to fall in 2021, standing at 18.7% (almost 3 points lower than in 2019). In the last two years, marked by the impact of the pandemic, there has thus been a reduction in the perception of degradation, perhaps also compressed by the emergence of other forms of discomfort during the lockdown experience. The percentage of dissatisfied people tended to increase along with the size of the municipality of residence: from 11.4% in towns of up to 2 thousand inhabitants (almost unchanged compared to 2019) to 28.4% in metropolitan centres (more than 5 points lower than in 2019, Figure 12a). The dynamics were similar but less pronounced, in the other types of municipalities, as well as in the sub-populations

32 From 2007 to 2015, building permits for new housing constructions decreased by about 80% in terms of usable living space, while the production of unauthorised dwellings is estimated to have decreased by about 35%: at that stage, therefore, the growth in the unauthorised building rate was not caused by an increase in illegal housing production but by the collapse of the legal one.

homogeneous by gender, age and education attainment (among which, however, no significant differences in level were observed). The indicator's variability was geographically concentrated in the southern regions, with a range of more than 20 percentage points between the lowest in the autonomous province of Bolzano (7.4%) and the highest in Campania (29.9%). In the other regions, the people who believed they lived in places "affected by evident degradation" were more than one in four in Sicilia and Lazio, less than one in ten in Friuli-Venezia Giulia, Valle d'Aosta, Marche and the autonomous province of Trento (Figure 12b).

Figure 12a.Dissatisfaction for the landscape of the place of living by type of municipality. Years 2019 and 2021. Per 100 people of 14 years and over

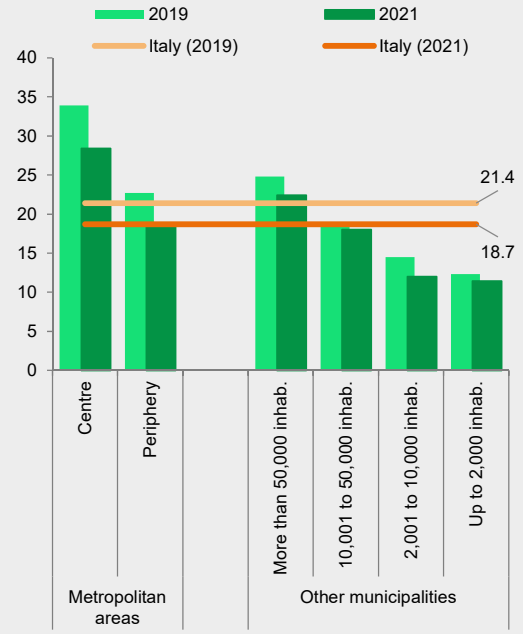
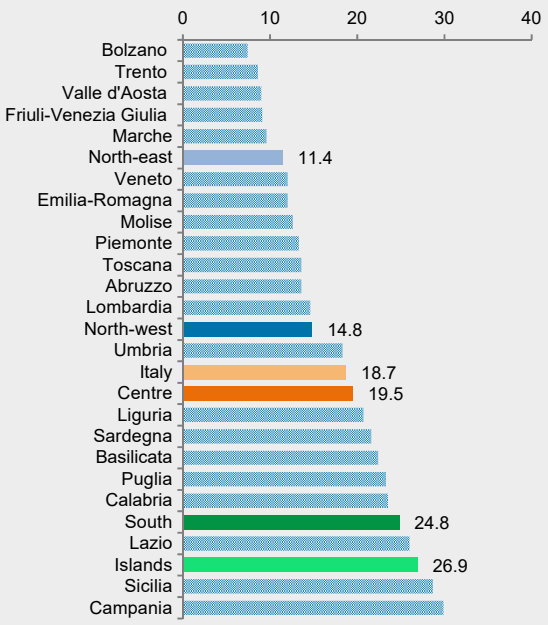


Figure 12b.Dissatisfaction for the landscape of the place of living by region and geographic area. Year 2021. Per 100 people of 14 years and over



Source: Istat, Survey on Aspects of daily life

In contrast, the indicator of concern about landscape deterioration remained stable over the pandemic period, standing at 12.4% since 2019 but steadily declining in previous years (Figure 13a). Despite being one of the least prevalent "environmental concerns"[33], the concern about the landscape was among the few that were not downgraded during the pandemic, along with concerns for biodiversity loss and forest destruction (both up from 2019). This indicator can be interpreted as a measure of social consideration for the value of the landscape and, in contrast with people that are not satisfied with the quality of landscape of the place where they live, generally recorded higher values in the North (14.9% in the North-west and 14.5% in the North-east) and lower values in the South (9.2%) and in the Islands (10.7%), although the territorial variability, in this case, appears to be more contained and has gradually decreased in recent years (Figure 13b). Concern for the landscape was more widespread among people with a higher education attainment (15.1%

33 The indicator is calculated on the basis of a question from the Multi-purpose Household Survey *Aspects of Daily Life* (ISTAT), which lists 14 "environmental problems", among which respondents have to indicate those (up to five) "that worry them most". The most frequently reported concerns are climate change and air pollution, expressed by more than 50% of the population.

Figure 13a.Concern for the deterioration of landscape by geographic area. Years 2013-2021. Per 100 people of 14 years and over

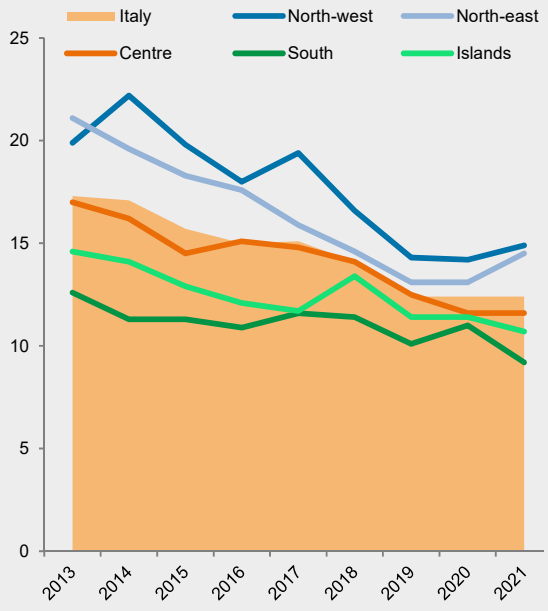
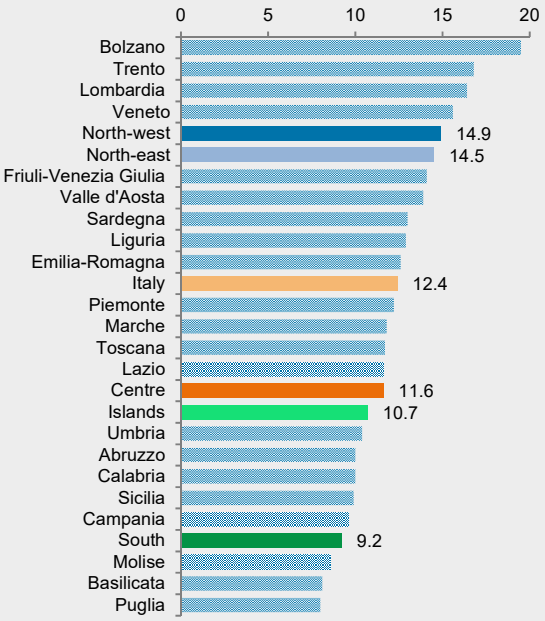


Figure 13b.Concern for the deterioration of landscape by region and geographic area. Year 2021. Per 100 people of 14 years and over



Source: Istat, Survey on Aspects of daily life

among university graduates, up by 1.4 points from 2019) compared to 11.1% among people with an elementary/middle school degree or no degree at all), but this gap has also been gradually narrowing, while no significant differences are observed in relation to age, gender or type of municipality of residence.

Indicators

1. **Current expenditure of Municipalities for culture:** Current expenditure for protection and valorisation of cultural properties and activities in euro per capita.
   Source: Istat - Processing of data from Final balance sheets of Municipalities, Provinces and Metropolitan areas.
2. **Density and importance of musems' heritage:** Number of permanent exhibition facilities per 100 sq.km (museums, archaeological sites, and monuments open to public), weighed by the number of visitors.
   Source: Istat - Survey on museums and other cultural institutions.
3. **Illegal building rate:** Ratio of the number of unauthorised buildings built in the reference year to the number of building permits issued by the Municipalities.
   Source: Center for social, economic and market research for building and the territory (Cresme).
4. **Erosion of farmland from urban sprawl:** Percentage ratio of rural areas affected by urban sprawl to the total of rural areas ("rural areas affected by urban sprawl": rural areas with increasing population and decreasing agricultural land).
   Source: Istat - Processing of data from General Census on Agriculture, General Census on Population and Housing, Census Mappingi.
5. **Erosion of farmland from abandonment:** Percentage ratio of abandoned rural areas to the total of rural areas ("abandoned rural areas": rural areas with decreasing population and decreasing agricultural land).
   Source: Istat - Processing of data from General Census on Agriculture, General Census on Population and Housing, Census Mapping.
6. **Pressures of mining and quarrying activities:** Volume of non-energy mineral resources extracted (cubic metres) per sq.km.
   Source: Istat - Anthropic pressure and natural hazards. Mining and quarrying extraction activities.
7. **Impact of forest fires:** Burnt forest area (wooded and non-wooded) per 1,000 sq.km.
   Source: Istat - Processing of data from Carabinieri Command of Units for Forestry, Environmental and Agri-food protection.
8. **Spread of rural tourism facilities:** Number of farmhouses per 100 sq.km.
   Source: Istat - Survey on farmhouses.
9. **Presence of Historic Parks/Gardens and other Urban Parks recognised of significant public interest:** Percentage ratio of the area of parks and gardens classified as "historic" and/or "of a significant public interest" by the Legislative Decree no. 42/2004 to the total area of the provincial capital Municipalities.
   Source: Istat - Processing of data from Survey on urban environmental data and Census Mapping.
10. **People that are not satisfied with the quality of landscape of the place where they live:** Proportion of regional population reporting that the landscape of the place where they live is affected by evident deterioration.
    Source: Istat - Survey on Aspects of daily life.
11. **Concern about landscape deterioration:** Proportion of population reporting, among the environmental problems for which they express more concern, the decay of landscape due to overbuilding.
    Source: Istat - Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Current expenditure of Municipalities for culture (a)	Density and importance of museum heritage (b)	Illegal building rate (c)	Erosion of farmland from urban sprawl (d)	Erosion of farmland from abandonment (d)	Pressure of mining and quarrying activities (e)
	2019	2020	2021	2011	2011	2019
Piemonte	18.3	1.05	4.1	18.5	41.4	334
Valle d'Aosta/Vallée d'Aoste	24.2	1.37	4.1	-	66.5	14
Liguria	26.7	0.68	6.3	31.8	57.4	223
Lombardia	23.2	1.25	4.3	24.0	31.0	559
Trentino-Alto Adige/Südtirol	51.8	1.16	3.2	-	28.4	198
Bolzano/Bozen	*58.4*	*0.96*	....	-	*31.3*	*165*
Trento	*45.3*	*1.40*	....	-	*24.9*	*236*
Veneto	22.1	1.49	4.7	56.9	23.1	380
Friuli-Venezia Giulia	38.7	1.36	3.2	7.0	54.2	246
Emilia-Romagna	33.2	0.97	4.2	27.0	42.6	273
Toscana	33.4	3.35	6.5	14.2	47.7	306
Umbria	18.6	0.87	10.4	8.3	50.0	491
Marche	23.7	0.94	10.4	14.7	38.8	163
Lazio	19.3	4.30	18.9	53.6	15.4	350
Abruzzo	9.5	0.16	28.9	16.3	43.1	193
Molise	8.2	0.25	28.9	6.9	74.4	428
Campania	4.2	3.11	48.8	29.6	34.2	210
Puglia	8.3	0.20	33.7	33.1	17.1	374
Basilicata	11.9	0.18	47.7	14.5	38.2	240
Calabria	8.0	0.25	47.7	22.0	54.3	77
Sicilia	9.4	0.86	45.8	16.9	29.5	216
Sardegna	29.8	0.31	23.2	6.5	27.1	163
North	25.8	1.17	4.3	24.3	37.5	339
North-west	22.2	1.12	4.3	20.9	40.0	398
North-east	30.8	1.21	4.3	27.4	35.2	285
Centre	24.2	2.88	13.8	25.1	37.0	323
South and Islands	9.3	0.68	38.4	18.8	34.2	220
South	6.8	0.75	39.2	23.6	38.1	241
Islands	14.5	0.59	36.3	11.8	28.3	191
Italy	19.9	1.30	15.1	22.2	36.1	287

(a) Euros per capita.
(b) Number of museums and similar facilities per 100 km2, weighed by the number of visitors.
(c) Illegal buildings per 100 authorized buildings. Values for Piemonte and Valle d'Aosta, Trentino-Alto Adige and Friuli-Venezia Giulia, Umbria and Marche, Abruzzo and Molise, Basilicata and Calabria refer to the two regions as a whole.
(d) Percentage of total land area.
(e) Cubic metres extracted per km2 of total land area. Data on extractions from quarries not available for Lazio and Calabria (reference year: 2018).

	Impact of forest fires (f)	Spread of rural tourism facilities (g)	Presence of historic parks/gardens and other urban parks recognised of significant public interest (h)	People that are not satisfied with the quality of landscape of the place where they live (i)	Concern about landscape deterioration (i)
	2020	2020	2020	2021	2021
	0.3	5.3	3.8	13.3	12.2
	..	1.8	0.9	9.0	13.9
	0.2	13.1	1.0	20.7	12.9
	0.6	7.2	2.3	14.6	16.4
	..	27.5	0.2	8.0	18.1
	..	*44.1*	*0.1*	*7.4*	*19.5*
	..	*7.7*	*0.3*	*8.6*	*16.8*
	0.1	8.3	3.0	12.0	15.6
	0.1	8.6	6.0	9.1	14.1
	..	5.5	0.7	12.0	12.6
	0.2	23.5	1.4	13.6	11.7
	0.2	16.5	4.2	18.3	10.4
	0.1	11.4	1.4	9.6	11.8
	2.3	7.6	1.0	26.0	11.6
	1.6	5.4	0.7	13.6	10.0
	2.3	2.6	0.1	12.6	8.6
	3.7	6.2	1.7	29.9	9.6
	1.8	4.9	0.6	23.3	8.0
	1.3	2.1	4.4	22.4	8.1
	3.0	3.6	0.5	23.5	10.0
	9.1	3.2	1.3	28.7	9.9
	3.3	3.3	0.3	21.6	13.0
	0.2	9.2	2.3	13.4	14.7
	0.4	6.6	2.6	14.8	14.9
	..	11.5	2.2	11.4	14.5
	0.8	15.8	1.4	19.5	11.6
	3.9	3.9	1.1	25.5	9.7
	2.3	4.4	1.1	24.8	9.2
	6.3	3.2	1.1	26.9	10.7
	1.8	8.3	1.7	18.7	12.4

(f) Area covered by forest fires, values per 1,000 km2.
(g) Number of farms per 100 km2.
(h) Square metres per 100 m2 of built-up area.
(i) Per 100 people of 14 years and over.

10. Environment[1]

Environmental issues have become increasingly central to the analysis of the determinants of well-being of people and communities, both in terms of perception of the quality of the environment in which people live, and in terms of availability of natural resources and accessibility of different territorial contexts. Although significant progress has been made in the last decade, efforts have not been decisive and the environmental picture still presents critical aspects, with different situations in different areas of the country, which are not always related to the traditional gap between North and South and Islands. Europe has launched the Next Generation EU programme, one of the aims of which is to urge member states to carry out reforms to accelerate the ecological transition, providing them with the resources for the necessary investments.
Bes indicators show that the decrease in emissions of CO_2 and other greenhouse gases that began more than a decade ago is continuing, accompanied in recent years by a reduction in domestic material consumption. $PM_{2.5}$ air pollution is decreasing but remains high and without appreciable improvement in the areas where historically the phenomenon is more severe.
As a result of climate change, extreme weather and climate events such as heat waves, no precipitation and extreme rainfall are increasing. Phenomena that, among other things, increase the risk of populations exposed to landslides and floods. Major problems remain with regard to the distribution of drinking water, sewage collection and urban wastewater treatment.
The area of protected natural land, which covers more than a fifth of the national territory, and the availability of urban green areas *per capita* in Italian cities, have not improved substantially in recent years. Although at a slower pace than in past years, the increase in soil sealing from artificial land cover continues.
Production per capita of urban waste is falling as a result of the economic cycle and the reduction in the share still disposed of in landfills continues. The increase in the percentage of electricity from renewable sources in recent years has been confirmed.

$PM_{2.5}$ air pollution: a critical situation persists in the North, improvements in the Islands[2]

The World Health Organisation (WHO) classifies air pollution as the main environmental health risk globally[3].
Air pollution depends in a complex way on multiple factors at a micro[4], local and regional scale. This makes the selection of meaningful air quality indicators difficult. Generally, one focuses on those for which a link between exposure and short and long term health effects

1 This chapter was edited by Stefano Tersigni and Domenico Adamo, with contributions from: Raffaella Chiocchini, Luigi Costanzo, Elisabetta Del Bufalo, Aldo Femia, Flora Fullone, Silvana Garozzo, Antonino Laganà, Maria Rosaria Prisco, Simona Ramberti and Silvia Zannoni.
2 The analysis of the air quality dimension was carried out in collaboration with Ispra - Silvia Brini and Giorgio Cattani.
3 For further information: https://www.who.int/data/gho/data/themes/air-pollution/ambient-air-pollution.
4 The micro scale refers to a homogeneous portion of territory in terms of detection zone and main source of pollution, in some cases sub-municipal, monitored by a single station. Local and regional scales, on the other hand, mean portions of territory monitored by several stations with different main sources of pollution.

is recognised. Among these, particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide (NO_2) and ground-level ozone (O_3) are the preferred components for monitoring.
The WHO considers $PM_{2.5}$ to be the most harmful air pollutant to health. Air concentrations of these substances reflect, at least in part, levels and temporal variability of concentrations of other pollutants.
The $PM_{2.5}$ indicator, which is suitable for the assessment of air pollution in urban as well as suburban and rural areas, is defined with reference to the percentage of valid measurements exceeding the threshold defined by the WHO (10 µg/m³)[5] out of the total number of valid measurements of annual average $PM_{2.5}$ concentrations for all station types, stratified by main source of pollution (traffic, background and industrial)[6] and location area (urban, suburban and rural).
It is worth noting that reference is made here to the WHO guideline value of 10 µg/m³ and not the one, introduced in 2021[7], of 5 µg/m³. The value of 10 µg/m³ in the new guidelines is still valid as an *interim* target, i.e. as an intermediate target to be achieved, in the knowledge that lowering the levels still further to 5 µg/m³ would lead to further benefits in terms of reducing exposure-related mortality. Given the widespread distribution of regional monitoring stations, the indicator is representative of the situation in the entire territory[8].
The percentage of valid measurements exceeding the WHO health reference value is shown in Figure 1. In Italy, in 2020, there was a decrease in the percentage of exceedances to 77.4% of the measurements taken - the lowest value of the indicator since 2010 - while in the pre-pandemic year it was 81.9%.
However, this trend towards the mitigation of $PM_{2.5}$ air pollution is not seen in the north-western and north-eastern regions where historically the highest values of the indicator were observed, which were stable in 2020 compared to the previous year (Figure 1).
However, trend analysis cannot disregard the evaluation of the role that meteorological conditions play in determining the differences that can be observed between the concentrations of one year and those of the previous year. This assessment cannot be made simply on the basis of observations, but a statistical analysis of the data must be implemented by applying correction methods that take the effect of seasonality into account. These methods, in fact, have shown for Italy (uniformly throughout the country) and for Europe that in the medium term, the number of measurement points where a statistically significant reduction trend in PM_{10}, $PM_{2.5}$ and NO_2 concentrations is observed is largely prevalent.
To try to understand the role of meteorology, it is worth observing the data on an indicator used by some regions in the Po basin[9] to assess the number of days throughout a season that are favourable to the accumulation of atmospheric particulate matter[10], which largely

5 https://www.who.int/publications/i/item/9789240034228.

6 *Traffic station*: a station located in such a position that the pollution level is mainly influenced by emissions from neighbouring roads. In other words, a sampling point representative of pollution levels determined predominantly by traffic emissions from neighbouring roads with medium to high traffic flows. *Background station*: a station located in such a position that the pollution level is not predominantly influenced by a single source or a single road. *Industrial station*: a station located in such a position that the pollution level is predominantly influenced by a single industrial source or neighbouring industrial area. For further information: https://www.istat.it/it/files//2021/12/Glossario-1.pdf.

7 https://www.who.int/news/item/22-09-2021-new-who-global-air-quality-guidelines-aim-to-save-millions-of-lives-from-air-pollution.

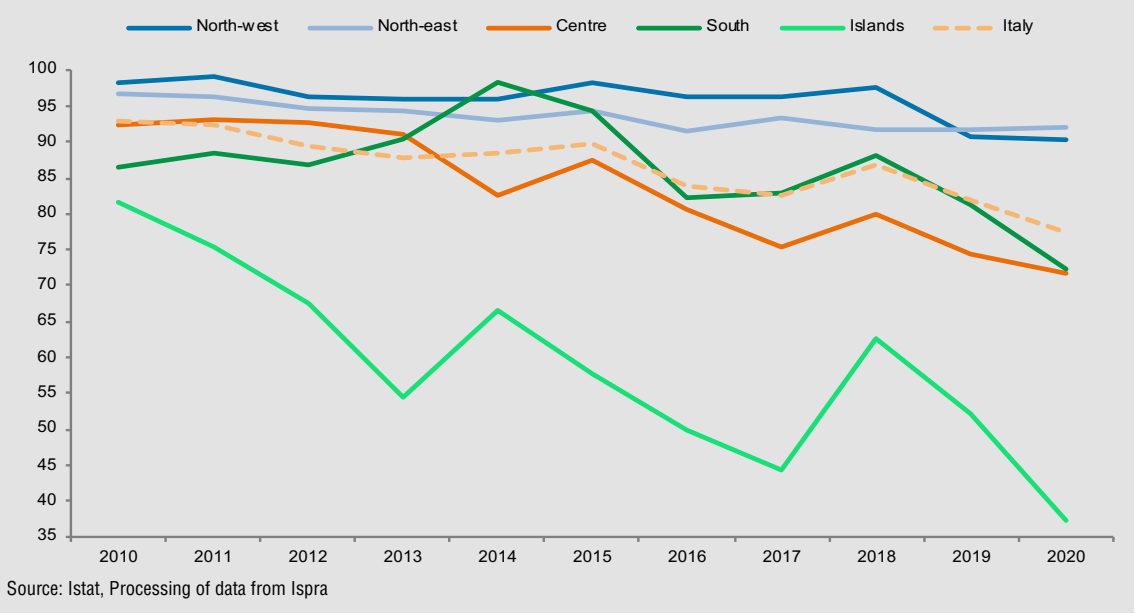
8 The representativeness of the indicator was also strengthened by estimating $PM_{2.5}$ concentrations at monitoring stations that only measured PM_{10}.

9 https://webbook.arpae.it/indicatore/Giorni-favorevoli-allaccumulo-di-PM10-00001/?id=670151aa-2fe2-11e2-95e1-11c9866a0f33.

10 Days favourable to PM_{10} accumulation: days in the cold season of the same reference year (January-March; October-

coincide with the days on which the 50 µg/m³ threshold for the daily average of PM_{10} is exceeded. In the Po basin, the percentage of favourable days exceeded 65% in some years (e.g. 2015 and 2017), while in others it remained below 50%. 2020 was the third-worst year in this respect in the 2003-2020 series. This is reflected in the comparison, by geographical area, of the levels recorded in 2020 with those of 2019 and the average of the period 2010-2019.
In the Centre, a slight improvement was observed (from 74.4% in 2019 to 71.7% in 2020). The improvement observed in the South (from 81.3% to 72.3%) and especially in the Islands (37.3%) was above average, where $PM_{2.5}$ exceedances were reduced by about 15 percentage points compared to 2019. The trend in the Islands with much lower percentage values compared to the other distributions should be highlighted (Figure 1).

Figure 1. Exceedances above the WHO health reference value (10 µg/m³) **out of the total number of valid measurements of annual average $PM_{2.5}$ concentrations by geographic area. Years 2010-2020. Per 100 valid measurements**

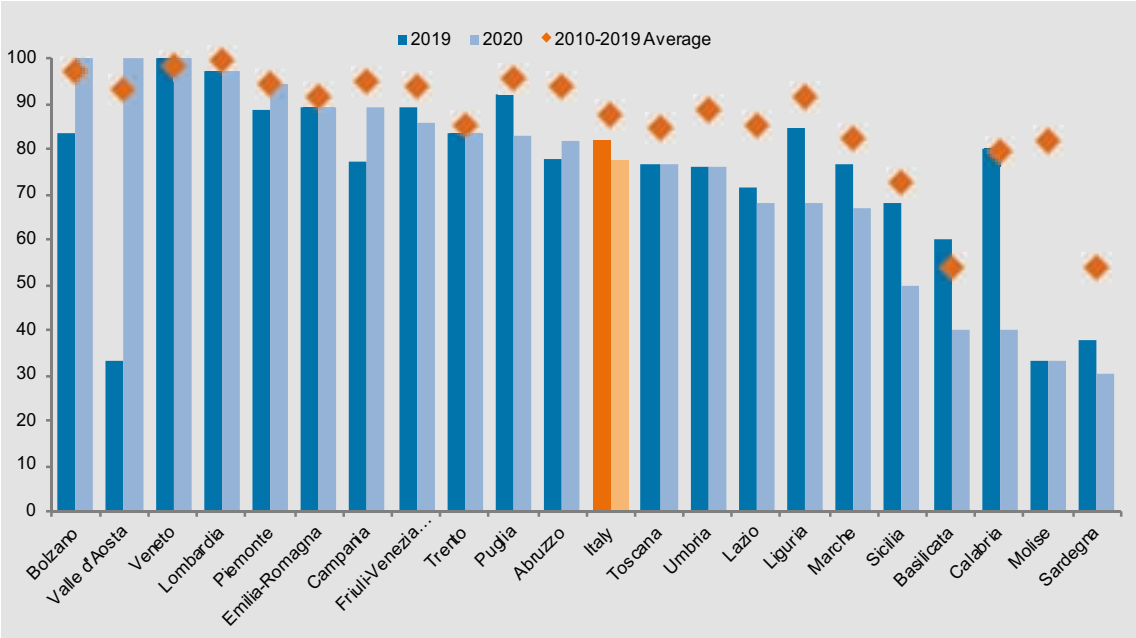


Source: Istat, Processing of data from Ispra

The regional detail of the indicator, compared to the pre-pandemic year and the average of the 2010-2019 period, highlights that in 2020 the northern regions, with the exception of Liguria, all had values above the average and had substantially stable levels compared to 2019 and the 2010-2019 average (Figure 2).

December) without rain (precipitation < 0.3 mm) on which the daily ventilation index, defined as the product of the average daily mixing height and the average daily wind intensity, is less than 800 m²/s.

Figure 2. Exceedances of the WHO health reference value (10 µg/m³) of annual average concentrations of $PM_{2.5}$ by region. Years 2019-2020 and 2010-2019 average. Per 100 valid measurements



Source: Istat, Processing of data from Ispra

Other pollutants also exceeding limits

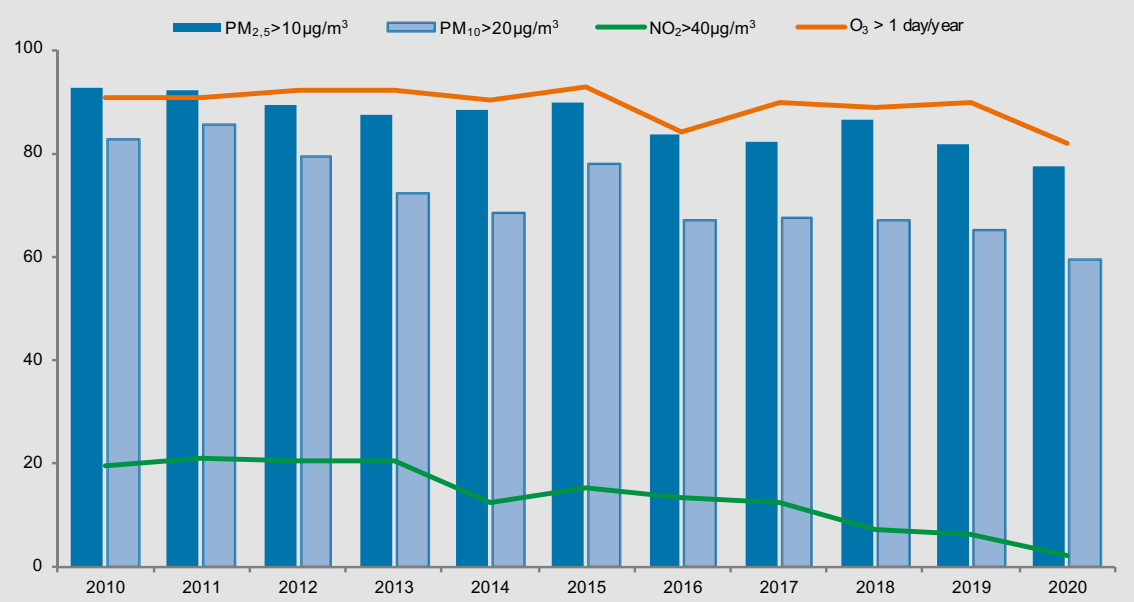
$PM_{2.5}$ is strongly correlated with PM_{10} (being a fraction of PM_{10} itself), and moderately so with NO_2. Comparing the time series (2010-2020) of the indicator with that of exceedances of PM_{10} with respect to the WHO reference value and of NO_2 with respect to the WHO and EU limit (which coincide), substantial consistency is observed between the trends. On the other hand, if we consider the indicator for ozone (relating to the failure to reach the long-term objective), a weak decreasing trend seems to emerge, probably attributable to the simultaneous reduction of its main precursors, i.e. nitrogen oxides and volatile organic compounds (Figure 3).

Due to repeated exceedances of PM_{10}, NO_2 and $PM_{2.5}$ limits, Italy is subject to infringement procedures under European[11] Directive 2008/50/EC[12]. One of the first infringement procedures opened by the European Commission against Italy was in 2014, due to the systematic and continuous exceeding of these parameters in different areas of the national territory. Moreover, according to the Commission, the measures envisaged by Italy are still not sufficient to shorten the period of exceedance and ensure compliance with the reference values.

11 Three infringement procedures are currently active: Procedure No. 2014/2174 for exceeding PM_{10} (already reached conviction); Procedure No. 2015/2043 for exceeding NO_2; Procedure No. 2020/2299 for $PM_{2.5}$.

12 Despite the fact that the $PM_{2.5}$ and PM_{10} limits set by European Directive 2008/50/EC (25 and 40 µg/m³ respectively) are higher than the WHO reference values (10 and 20 µg/m³ respectively), Italy is in the infringement procedure.

Figure 3. Exceedances of the annual average concentrations of $PM_{2.5}$, PM_{10} and NO_2 of the WHO reference values (10, 20 and 40 µg/m³ respectively) **and non-compliance with the long-term target for O_3** (>1 day/year exceeding the daily average limit of 120µg/m³)**. Years 2010-2020. Per 100 valid measurements**

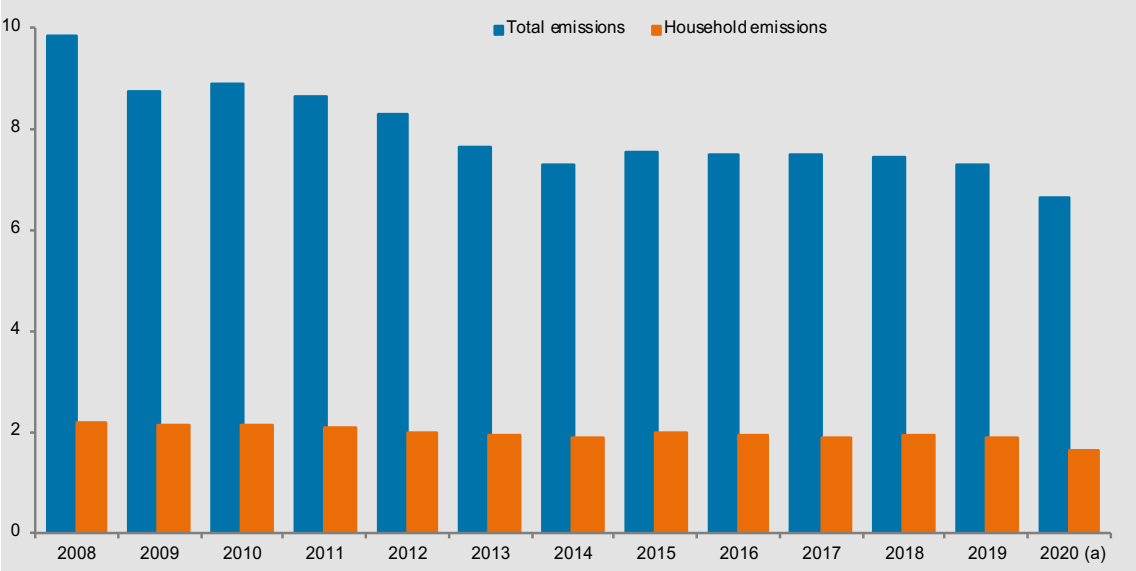


Source: Istat, Processing of data from Ispra

CO_2 and greenhouse gas emissions decreased, with about a quarter of the decrease due to households

Emissions of CO_2 and other greenhouse gases from economic activities and households fell sharply to 6.6 tonnes of CO_2 equivalent per inhabitant in 2020, due to the restrictions imposed during the lockdown period.
In 2019, emissions of CO_2 and other greenhouse gases per inhabitant were 7.1 tonnes of CO_2 equivalent. This confirms the decline that started in 2008, when the tonnes *per capita* emitted were 9.8 (Figure 4).
The contribution of emissions generated by households in 2020, mainly due to the consumption of fuels for private transport and domestic use, was 1.7 tonnes of CO_2 equivalent per inhabitant, the lowest recorded since 2008 and equivalent to a reduction in household emissions of about 15 million tonnes compared to 2019. Household emissions account for about 25% of total emissions.
The well-being and stability of local communities are highly dependent on climate change, both locally and globally, and on the effects of extreme weather events.
Climate change affects human health in multiple and complex ways, putting pressure on health systems that are often fragile and ill-equipped to cope with continuous and overlapping emergencies. Families and means of livelihood are put at risk by increases in the frequency and severity of extreme weather conditions. The distribution, exposure and effect of weather and climate events do not affect them in the same way everywhere, but the vulnerability of different contexts can amplify or mitigate the impacts.

Figure 4. Total emissions of CO_2 and other greenhouse gasses and share generated by households. Years 2008-2020 (a). Tonnes of CO_2 equivalent per capita



Source: Istat-Ispra, Accounts and air emissions inventory
(a) 2020 provisional data.

Average temperatures continue to rise[13]

The effects of climate change in terms of temperature and precipitation are increasingly evident. In 2021 the minimum and maximum temperatures were higher than the climatic average (reference period 1981-2010); at a national level, the anomalies were +0.7 °C and +0.8 °C respectively. This indication was confirmed in all Italian regions with positive differences between 0.4 and 1.1 °C in the Islands. As far as precipitation is concerned, the difference at the national level was +2%, but the situation was more heterogeneous and varied greatly with latitude, going from negative differences in the North (with peaks of more than -11% in Piemonte and Emilia-Romagna) and in part of the Centre, to widespread positive anomalies in the South and very high in the Islands (+27.6%).
With respect to 2020, although at the national level rainfall amounts were comparable, the spatial distribution of the deviations from the climatic average was substantially different, moving from +4.4% in 2020 to -4% in the North in 2021, from -1.1% to +7.5% in the South, and from -7% to +27.6% in the Islands. In the case of Insular Italy, moreover, it should be noted that the weather conditions were significantly different from those of the reference climatic period, both in terms of temperature and precipitation.
The comparison with the climatic average 1991-2020, shows smaller temperature anomalies and the same gradient, in relation to latitude, in the precipitation deviations, with more accentuated values in the negative deviations and lower values in the positive ones.
In order to examine these changes more specifically, which are among other things a source of discomfort for the population, the indicators measuring the changes, in frequency and

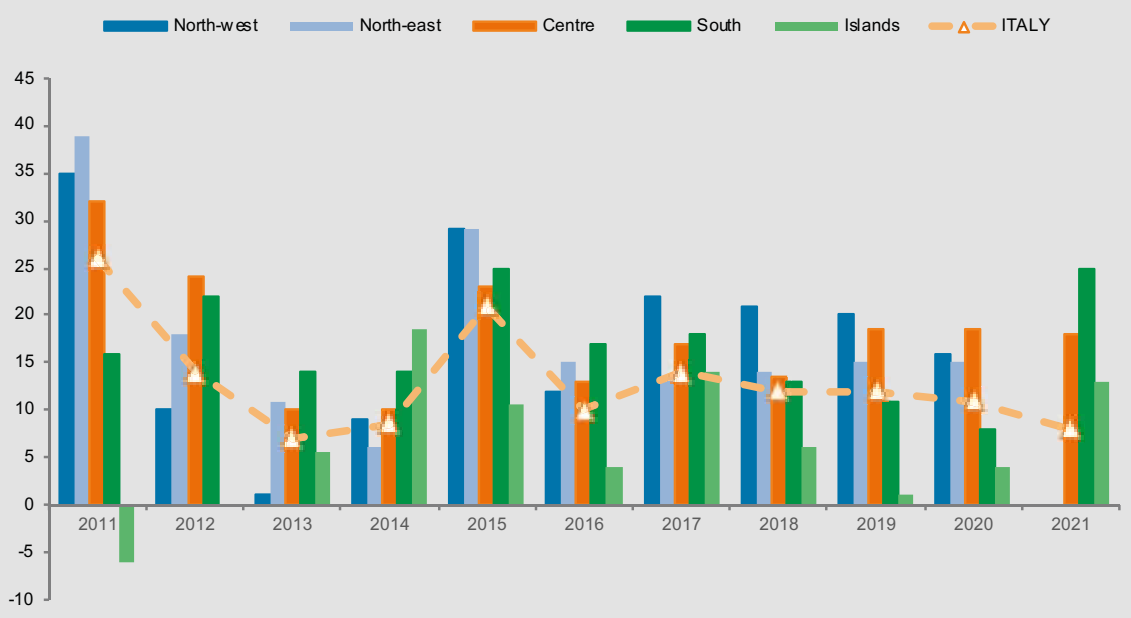
13 Analysis on climatic weather events was carried out in collaboration with CREA Agricoltura e Ambiente - Roberta Alilla, Flora De Natale, Barbara Parisse.

intensity, of extreme events have been updated.

Warm spells increase in the South and Islands

The *Warm Spell Duration Index* (WSDI), which represents the number of days in the year on which the maximum temperature is above the 90th percentile of the distribution over the reference climate period (1981-2010), for at least six consecutive days, allows to identify prolonged and intense periods of heat. Unlike indices based on a fixed threshold value, this index is representative of local climate changes. The WSDI identifies periods of heat in a relative sense, which can occur at any time of the year. For each geographic area, the index is calculated annually as an areal median.
The intensity of the hot days in the years 2011-2021 was always greater than the median of the 1981-2010 reference period in all the regions with the exception of the Islands in 2011 (- 6 days) and 2012 (zero difference). Compared to the previous year, in 2021 the phenomenon was absent in the North, stationary in the Centre (+18 days) and showed greater positive differences in the South (25 days) and in the Islands by 13 days (Figure 5).

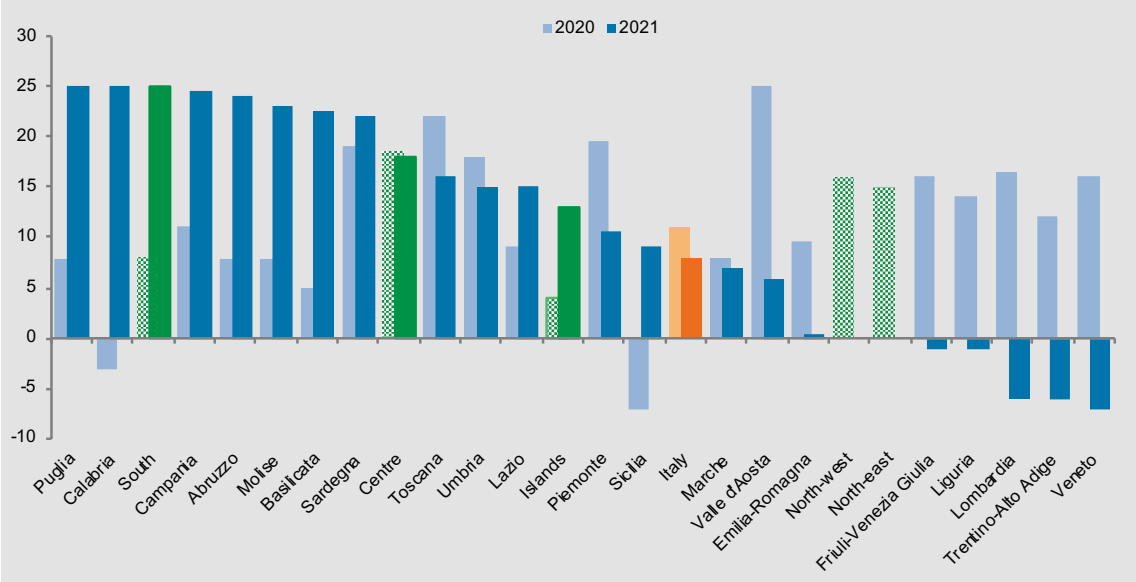
Figure 5. Warm spell duration index (WSDI): deviations from the climatic median (reference period 1981-2010) **by geographic area. Years 2011-2021**



Source: Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data

In the last two years (2020-2021), however, the variations with respect to the climatic value are always positive, with the exception of Calabria and Sicilia in 2020 and some northern regions in 2021: Veneto (- 7 days), Lombardia and Trentino-Alto Adige (- 6 days), Friuli-Venezia Giulia and Liguria (- 1 day). Overall, 2021 showed a higher incidence of heat waves compared to 2020, which were 17 and 9 days higher for the South and the Islands, respectively. At the national level, there was a decrease in the index, in the Centre, the phenomenon was less pronounced (Figure 6).

Figure 6. Warm spell duration index (WSDI): deviations from the climatic median (reference period 1981-2010) **by region and geographic area. Years 2020 - 2021.**

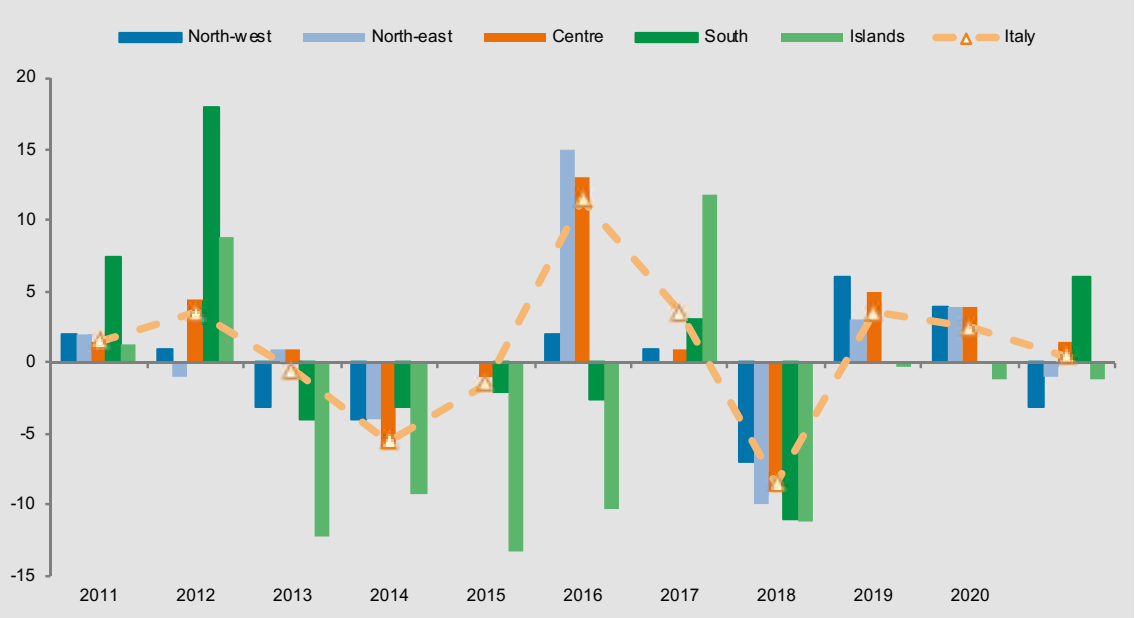


Source: Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data

Consecutive dry days are decreasing everywhere except in the South

The *Consecutive Dry Days* (CDD) index represents the maximum number of consecutive days without rain (i.e. with daily precipitation of less than 1 mm) during the year.
It is one of the most widely used indicators of extreme events to highlight drought periods, the effects of which also have an impact on the quality of the environment and thus on

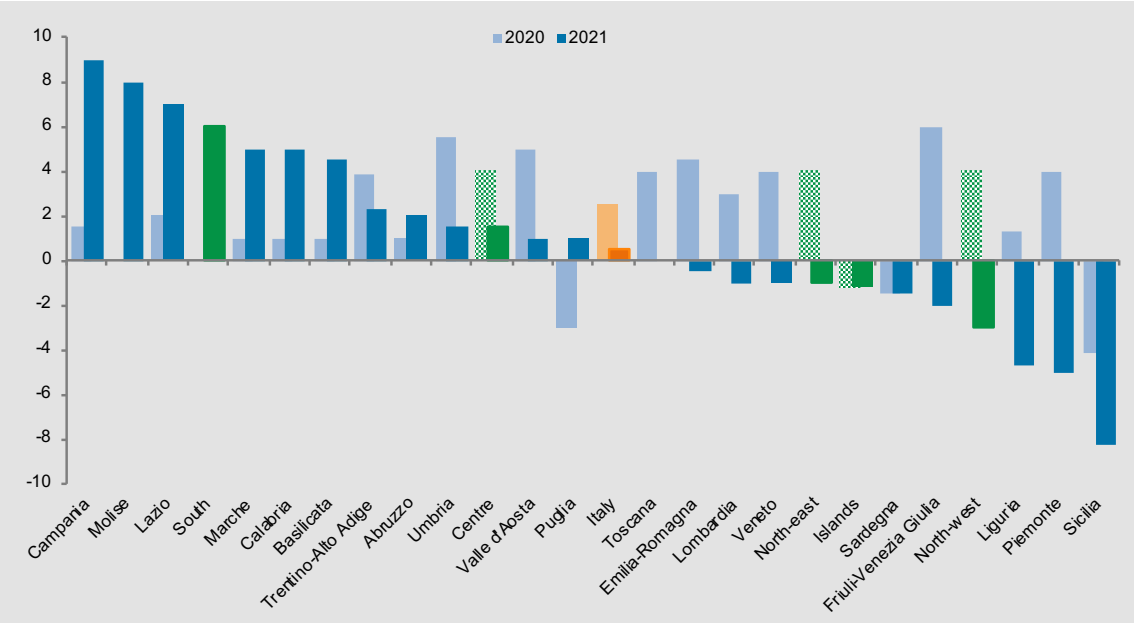
Figure 7. Consecutive Dry Days (CDD): deviations from the climatic median (reference period 1981-2010) **by geographic area. Years 2011-2021**



Source: Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data

people's health, by favouring the continuation of pollutant concentrations in the atmosphere and reducing the supply of water resources.
Figure 7 for 2021 shows a reduction in consecutive days without rain nationwide and a maximum positive difference in the South (+6 days). Negative index values affected the northern regions and Islands.
The phenomenon in 2021 differed substantially from the previous year with an increase of 6 consecutive dry days in the South and a significant reduction of 7 days in the North-west (Figure 8). On a national scale, the figure remained slightly above the climatic average, while on a regional level the highest deviations from 2020 were recorded in Campania (+9 days) and Sicilia (- 8.2 days).

Figure 8. Consecutive Dry Days (CDD): deviations from the climatic median (reference period 1981-2010) **by region and geographic area. Years 2020 and 2021**



Source: Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data

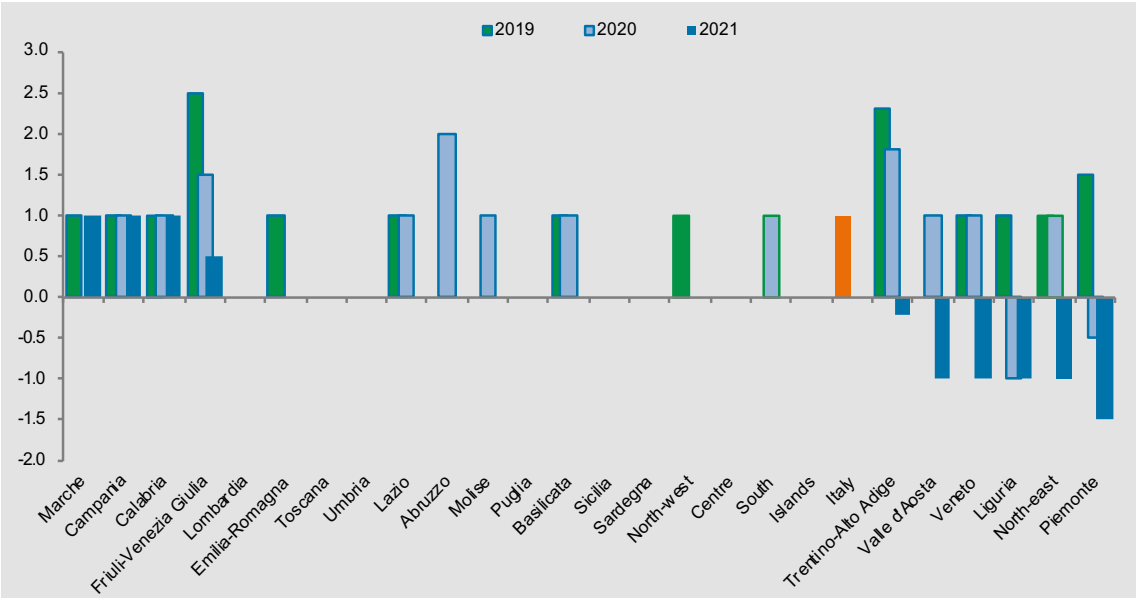
Slight increases in extreme rainfall

The index of very heavy rainfall (R50mm - *Number of severe rainfall days*) represents the number of days in the year when the total daily precipitation exceeds or equals 50 mm.
It is an index of extreme weather and climate conditions that measures days of very heavy rainfall[14] that have an impact on people's well-being and health. Flood and/or landslide disasters are often associated with such events in Italy. Most of the floods that have affected Italy have involved events with values above this limit.
In Italy, the R50mm index shows an increase compared to the climatic median (+1 day) in 6 of the 11 years observed. There is no reduction in the index except for the North-West in 2015 and the North-East in 2011, 2015 and 2021.

14 The precipitation value of 50 mm in one day is very high, corresponding to 50 litres of water poured on one square metre of surface, the effects of which can be disastrous.

In 2021, for more than half of the Italian regions the days of very intense precipitation did not differ from the climatic median (Figure 9). Compared to this, an increase was observed in Marche, Campania and Calabria (as in the two previous years) and to a lesser extent in Friuli-Venezia Giulia, while negative values were concentrated in the North, with a minimum of - 1.5 days in Piemonte.

Figure 9. Extreme precipitation events (R50mm)**: deviations from the climatic median** (reference period 1981-2010) **by region and geographic area. Years 2019-2020**



Source: Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data

14% of the population lives in hydrogeological risk areas

Due to the geomorphological characteristics of Italy, the hydrogeological risk caused by landslides and flooding events is widespread throughout the territory, with local changes, even in terms of danger to human life.
The increasing frequency of extreme weather events, and in particular of intense and localised rainfall, only accentuates this risk. Human activities that exacerbate the vulnerability of the territory are overbuilding, illegal building rate, the abandonment of highlands, the excavation of quarries, non-eco-sustainable cultivation techniques, the lack of maintenance of watercourses and invasive and careless interventions on them. The results of the Ispra 2020 Mapping show that 13.7% of the Italian population lives in areas classified as high or very high landslide hazard (2.2%), and in areas of medium and high hydraulic hazard (11.5%), i.e. periodically subject to flooding, with return times varying between 100 and 200 years. The population most exposed to the risk of landslides was mainly that living in Valle d'Aosta (12.1%), followed by Basilicata (7%) and Molise (6.1%). The region with the highest percentage values for flood risk was Emilia-Romagna (62.5%), followed by Toscana (25.5%) and Trentino-Alto Adige (18%).

Total losses in drinking water distribution networks are still high in provincial capitals

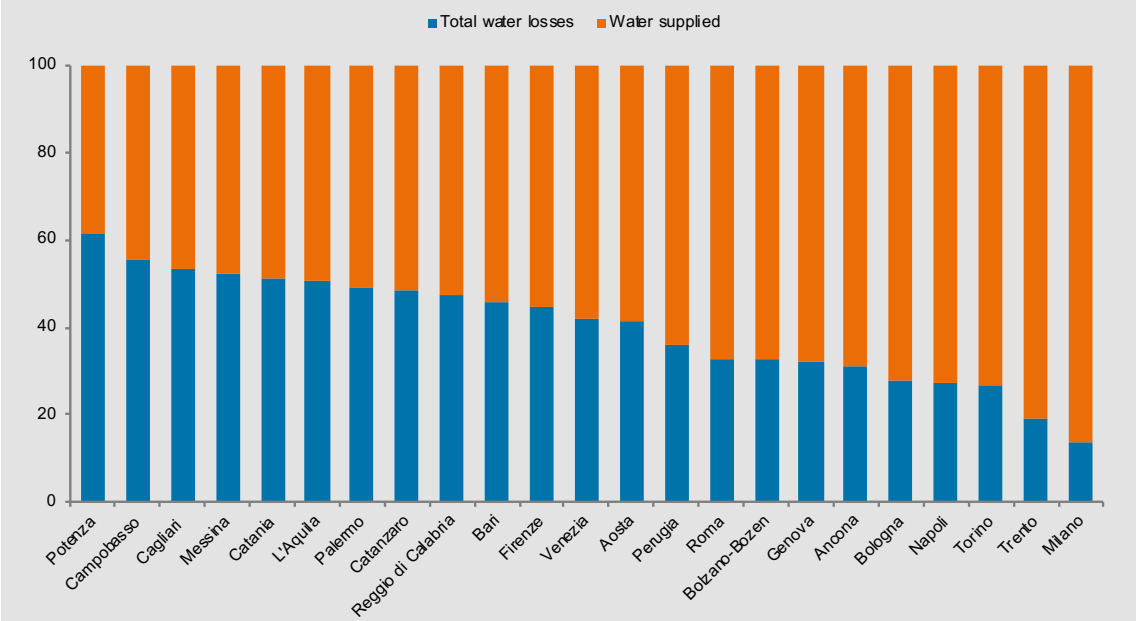
In 2020, a total of 370 litres per inhabitant per day, i.e. 2.4 billion cubic metres of water, were pumped into the drinking water distribution networks in the provincial capitals, and 236 litres per inhabitant per day (1.5 billion cubic metres per day) were supplied for authorised uses to end-users.
The supply of drinking water largely depends on the often very different infrastructural and socio-economic characteristics between municipalities, which inevitably affect the use of water resources by individual users. Volumes supplied in excess of 300 litres per inhabitant per day were found in Milano, Isernia, Cosenza, L'Aquila, Pavia, Brescia and Venezia. On the other hand, the municipalities where there is less supply, with quantities below 150 litres per inhabitant per day, are: Barletta, Arezzo, Agrigento, Andria and Caltanissetta.
Not all the water pumped into municipal distribution networks reaches the end-users. Total network losses generate important environmental, social and economic repercussions, especially in the increasingly frequent periods of water shortages. In particular, in 2020, in the capital municipalities, 36.2% of the water pumped into the network was lost (it was 37.3% in 2018), with a daily loss of 42 cubic metres per km of network (in line with 2018). In over one in three capitals, total losses exceeded 45%, a similar proportion to that recorded in 2018. The most critical conditions, with values above 65%, were recorded in Chieti (71.7%), Latina (70.1%), Belluno (68.1%) and Siracusa (67.6%). On the contrary, a better infrastructural situation, with total water losses below 25%, was recorded in about one in five municipalities, a ratio that increased slightly compared to 2018. In seven regional capitals we find the lowest values of the indicator, below 15%: Macerata (9.8%), Pavia (11.8%), Como (12.2%), Biella (12.8%), Milano (13.5%), Livorno (13.5%) and Pordenone (14.3%).
Compared to 2018, there was a reduction in the volumes handled in the municipal networks of the capitals. The volumes pumped into the network decreased by more than 4%, compared to -1.6% of the volumes supplied. This resulted in a reduction in total network losses of about 1 percentage point, continuing the trend of previous years.
The changes may depend both on actual changes in the water supply and on changes in the criteria for calculating the volumes consumed and not measured at the meter. The pandemic may also have generated changes in the volumes dispensed. In fact, in some municipalities with a strong tourist vocation, such as Rimini and Venezia, there was a significant reduction in the volumes dispensed, 11.8 and 13.9% compared to 2018.
In 2020, eleven regional capitals in Southern Italy resorted to water distribution rationing measures due to the obsolescence of the water infrastructure. Interventions to suspend and reduce drinking water supply were adopted in almost all the Sicilian regional capitals (involving almost 217 thousand citizens, equal to 13.9% of the region's residents), in two in Calabria (Reggio Calabria and Cosenza), in one in Abruzzo (Pescara) and in Campania (Avellino).

Lack of public sewage treatment service persists for about three out of ten residents

Urban wastewater treatment plants are essential infrastructures for reducing pollution of surface and groundwater bodies, thus safeguarding the environment in terms of water protection, biodiversity conservation, land and landscape enhancement and public health protection. In 2018, the public urban wastewater treatment service, guaranteed by 18,140

plants in operation, treated an average annual pollutant load of approximately 68 million population equivalents. 65.5% of the civil and industrial pollutant load was treated in plants with advanced-type treatment, 29.5% in secondary-type plants, and the remaining 5% in primary-type plants and Imhoff tanks[15]. The North-west and the South together account for

Figure 10. Water supplied for authorised uses and total water losses in public water supply networks by regional capital cities. Year 2020. Percentage values of water input into supply network



Source: Istat - Urban Water Census

more than 50% of the pollutant load treated by plants nationwide. The estimated population connected to urban wastewater treatment plants alone was approximately 70% of the resident population (42.3 million inhabitants). The remaining part of the population (approximately 18 million inhabitants) is therefore not connected to the public sewage service and resides in municipalities that are either completely deprived of the service (339 municipalities, corresponding to 2.7% of the resident population) or in municipalities that are only partially treated. Sicilia, where 6.4% of the population resides in 25 municipalities completely lacking a public sewage service and 13.3% in 80 municipalities lacking a wastewater treatment service, is the main recipient of the four infringement procedures against Italy, initiated between 2004 and 2017 in the sewage-wastewater treatment field and due to the failure of the agglomerations to comply with the EU wastewater directive. Significant situations of non-compliance also exist in Campania, where 7.8% of the population live in municipalities with no public sewage service.

15 Imhoff tank: septic tanks that allow the clarification of domestic sewage from small civil settlements. The tanks are proportioned and constructed so that the holding time of the spilled sewage is approximately 4-6 hours; the settled sludge undergoes anaerobic sedimentation.

Protected natural areas cover over one-fifth of the national territory

The Natura 2000 Network and the areas on the Official List of Protected Natural Areas (EUAP) constitute the main protected, marine and terrestrial areas in the Country and represent the main measure for the conservation of biodiversity.
All terrestrial protected natural areas cover 21.6% of the national territory, a value that has remained unchanged since 2012[16]. The most significant percentages of regional protected areas are found in the South: in particular in Abruzzo (36.6%) and Campania (35.3%). Marine protected areas cover about 11 thousand square kilometres of sea surface, mainly in Sicilia, Toscana, Sardegna and Puglia.
In 2021 the availability of urban green areas in Italian cities was 31 square metres per inhabitant. Since 2011, this value, although on the rise, has changed only slightly (+0.4% per year). However, public green areas are not evenly distributed among the 109 capital municipalities, since about 50% of the total surface area is concentrated in only 13 cities and one city in ten does not reach the minimum standard, required by law, of 9 square metres per inhabitant. At the territorial level, the indicator is on average higher in the regional capitals of the North-East (62.2 m^2 per inhabitant) and in particular in Bolzano, Trento, Pordenone, Gorizia and Trieste, but in general, the availability of urban green areas is highly heterogeneous in the various urban realities.

Modest increase in soil consumption

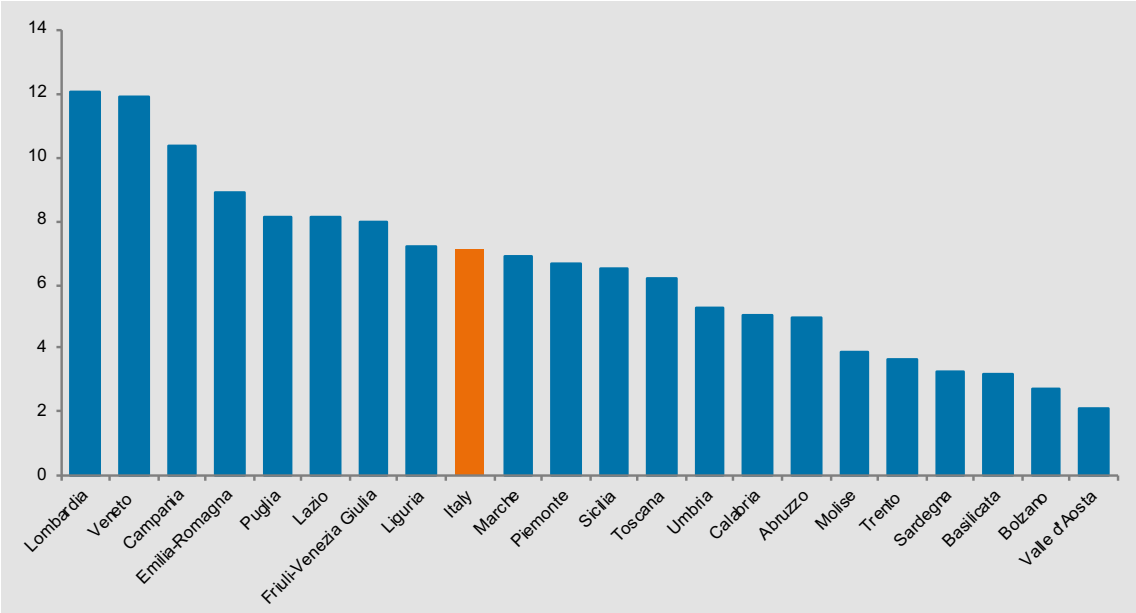
In 2020, the increase in impermeable artificial cover producing "soil consumption"[17] amounted to 56.7 km^2. Compared to 2019, the increase in artificial surfaces was only partly compensated by the restoration of additional agricultural, natural or semi-natural areas of 5 km^2. This is not yet fully sufficient to reach the target of zero net soil consumption[18], which in 2021 amounted to 51.7 km^2, of which 9.8 km^2 was permanent consumption. The rate of net soil consumption remains in line with those of recent years, at 14 hectares per day, and is still a long way from the EU targets, which should bring net consumption to zero by 2050.
Ispra estimates show that in 2020, impermeable surfaces will cover 7.1% of the national territory. The changes observed in the last year are concentrated in some areas of the Country: they are particularly high in Lombardia, Veneto and Campania (Figure 11). The phenomenon remains very intense along the coasts of Sicilia and southern Puglia and in the metropolitan areas of Rome, Milano, Napoli, Bari and Bologna. High degrees of change persist along almost the entire Adriatic coast. The greatest density of change has been recorded along the coastal strip within one kilometre from the sea, in lowland areas, in cities and in urban and peri-urban areas of the main poles and belt municipalities at the expense, mainly, of formerly agricultural soils and herbaceous vegetation.

16 The indicator considers, net of overlaps, only the land surfaces of the sites included in the Official List of Protected Natural Areas published by the MATTM and those belonging to the Natura 2000 Network. The latter include the Sites of Community Importance (SCIs), identified by the Regions and subsequently designated as Special Areas of Conservation (SACs) according to the Directive 92/43/EEC "Habitat", and the Special Protection Areas (SPAs) established according to the Directive 2009/147/EC "Birds".

17 Soil consumption is defined as the change from non-artificial land cover (non-consumed soil) to artificial land cover (consumed soil).

18 Net soil consumption is assessed through the balance between soil consumption and the increase of agricultural, natural and semi-natural areas due to reclamation, demolition, removal of sealing, renaturation or other interventions (European Commission, 2012).

Figure 11. Soil sealed by region. Year 2020. Percentage value of the regional area



Source: Ispra - Soil consumption, territorial dynamics and ecosystem services

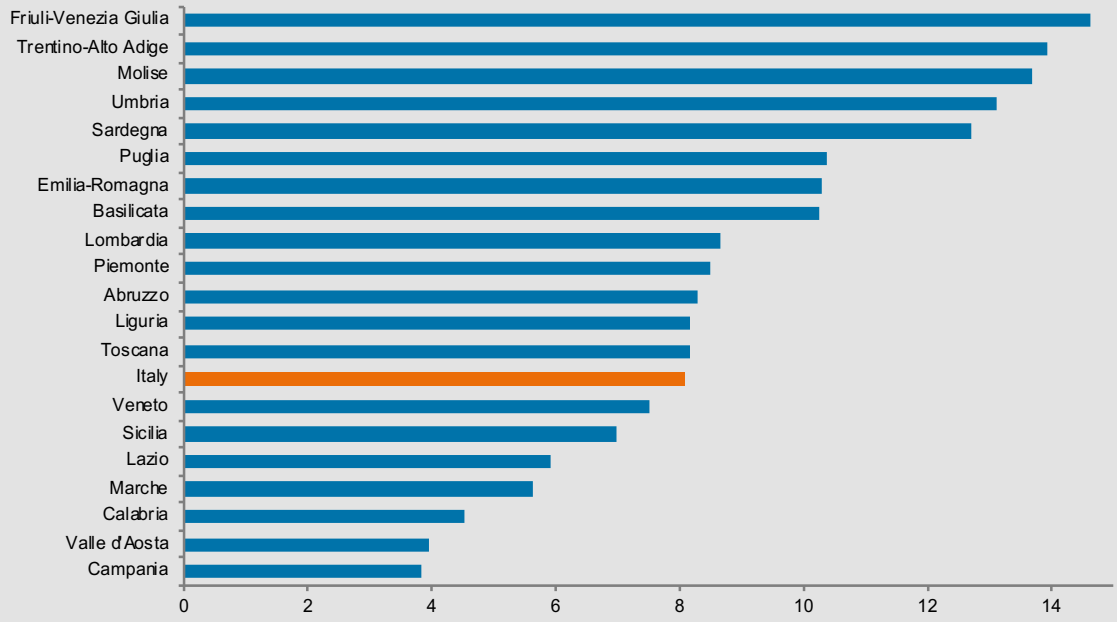
Domestic material consumption reduced by 8% in 2020

Domestic material consumption (Dmc)[19] offers a representation of the pressures that the environmental system undergoes in the face of the country's socio-economic dynamics.
In general, the use of material resources characterises the way in which the metabolism of the socio-economic system fits into natural cycles: historically, mostly by interrupting and unbalancing them; in perspective, hopefully, in an increasingly ecologically sustainable manner.
In 2020, 459[20] million tonnes of matter were consumed, about 8% less than in the previous year and in contrast to the gradual growth recorded in 2017-2019.
In 2018, the Dmc was geographically distributed with the highest values in the North-west (28%) and the lowest in the Islands (11.4%). At the regional level, there were significant differences related to the main regional socio-economic indicators. Lombardia recorded the highest value of 87 million tonnes, followed by Emilia-Romagna (46 million tonnes), Puglia (42 million tonnes) and Piemonte (37 million tonnes).
The *per capita* Dmc was lowest in Campania, at 3.8 tonnes per inhabitant, and highest in Trentino-Alto Adige and Friuli-Venezia Giulia, with 13.9 and 14.7 tonnes *per capita* (Figure 12).
Considering consumption per hectare, Valle d'Aosta and Basilicata, the least densely populated regions, had the lowest values (1.5 and 5.8 tonnes per hectare, respectively), Liguria and Lombardia (with the highest population density) the highest values (23.5 and 36.5 tonnes per hectare).

19 Domestic Material Consumption measures the quantity of matter, other than water and air, that is released into the environment (incorporated into emissions or effluents) or accumulated in new anthropogenic stocks (both capital and other durable goods and waste), calculated indirectly as the sum of domestic extraction (UMDEXT) and net imports (PTB equals IMP-EXP).

20 Provisional data.

Figure 12. Domestic material consumption per capita by region. Year 2018. Tonnes per capita



Source: Istat - Material flow accounts

Decline in annual municipal waste production

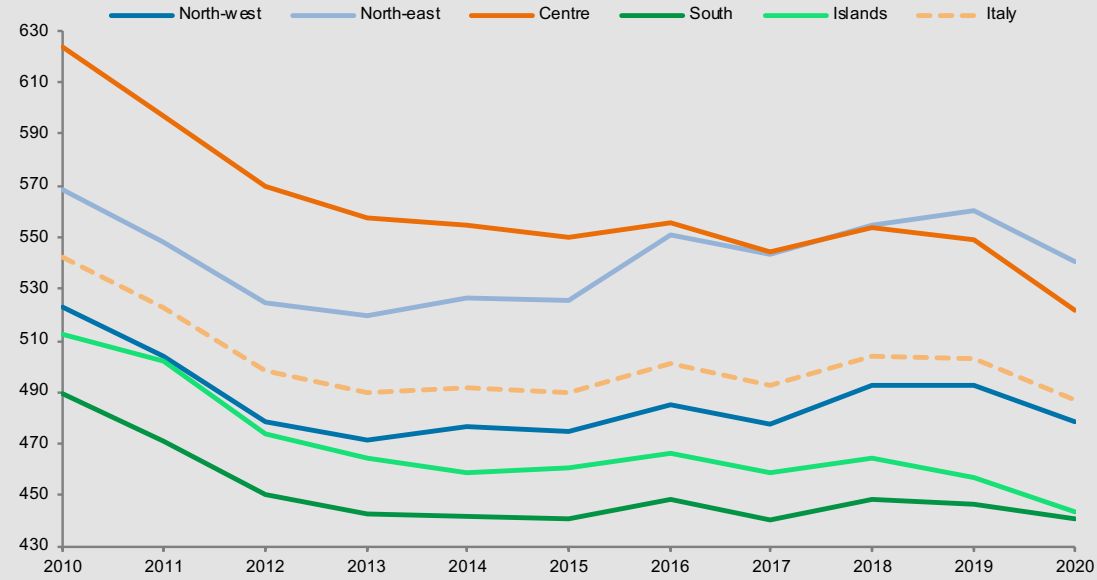
Waste production has a major impact on the environment, at all the different stages of the chain - collection, recycling, incineration (with or without energy recovery), landfilling - and therefore on human health (urban hygiene, soil pollution, emissions from incinerators/terminators, emissions from transport/processing/storage).

As required by European objectives[21], municipal waste production will have to be reduced in the future as a result of policies and consequent actions aimed at improving environmental quality with a view to the circular economy, thus decoupling the trend of waste production from that of economic growth. During the pandemic period, the reduction in waste generation was mainly due to the economic crisis rather than to environmental sustainability policies.

In 2020, compared to the pre-pandemic year, the production of municipal waste in Italy fell to 28.9 million tonnes (- 3.6% of the total amount compared to 2019), equal to 487 kilograms per inhabitant (- 16 kilograms *per capita*) almost returning to the lowest *per capita* value since 2010, recorded in 2015 (486.2). Compared to 2019, the reduction in waste production, both in terms of total tonnes and *per capita* value, was most significant in the North-east (- 3.7% tonnes and - 20 kilograms per inhabitant) and especially in the Centre with a reduction of 5.4% tonnes and 28 kilograms *per capita* (Figure 13).

21 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008, establishes measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste, putting prevention first, in order to reduce the amount of waste generated. This Directive, which also included the target of preparing for re-use and recycling of municipal waste at least 50% by 2020, was amended by Directive (EU) 2018/851, included in the Circular Economy Package that came into force on 4 July 2018 and implemented by Legislative Decree No 116 of 3 September 2020, which sets new targets of preparing for re-use and recycling of municipal waste to be achieved by 2025 (55%), 2030 (60%) and 2035 (65%).

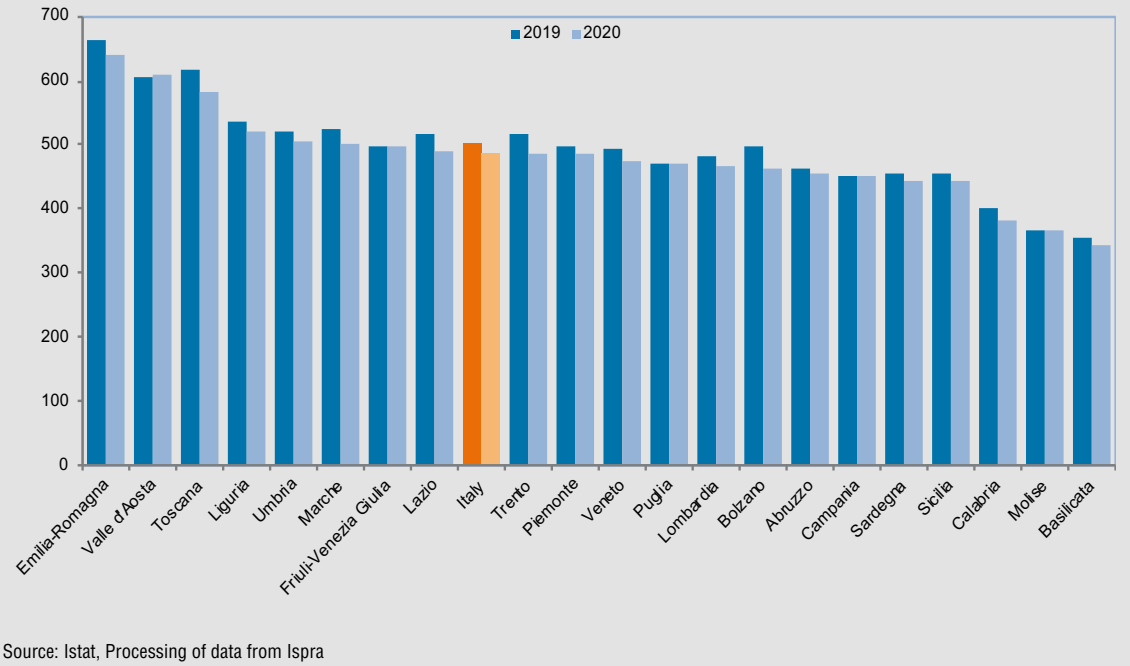
Figure 13. Municipal waste generated by geographic area. Years 2010-2020. Kilograms per inhabitant



Source: Istat, Processing of data from Ispra

Considering the territorial detail, compared to 2019, a reduction in *per capita* waste production was confirmed in all regions and autonomous provinces. In Toscana and in the autonomous provinces of Bolzano and Trento, it was twice the average (more than 32 kilograms *per capita* less compared to 16). The significantly higher *per capita* values were maintained in Emilia-Romagna (639 kilograms per inhabitant), Valle d'Aosta (609.2) and Toscana, with 583.1 kg *per capita* (Figure 14).

Figure 14. Municipal waste generated by region. Years 2019 and 2020. Kilograms per inhabitant

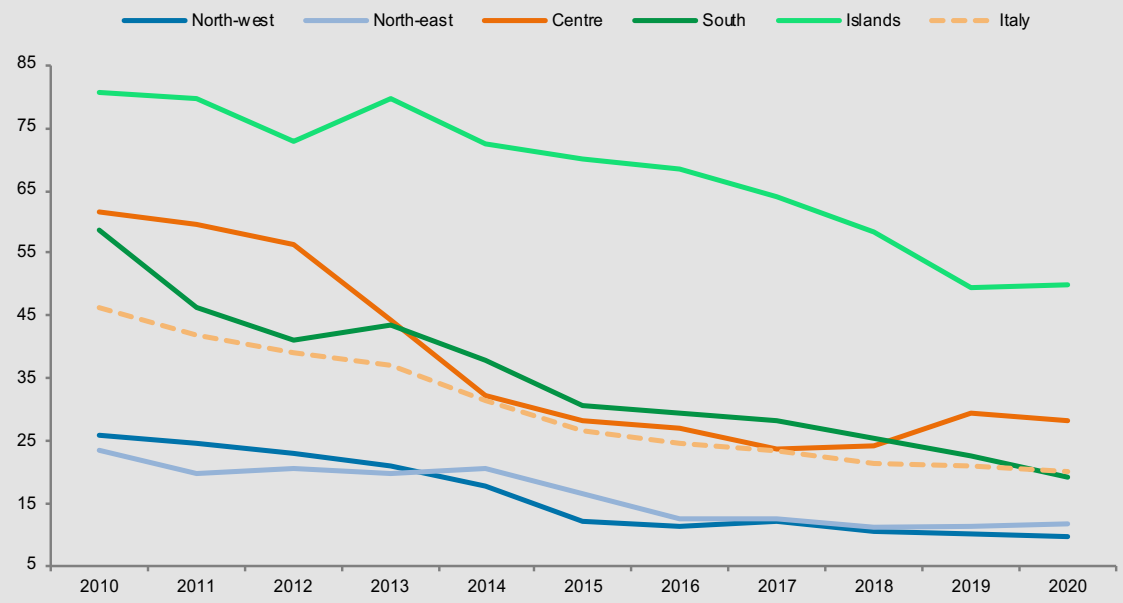


Source: Istat, Processing of data from Ispra

Landfilling of waste in decrease, but still twice the EU 2035 target

Waste that cannot be further utilised is disposed of by incineration without energy recovery or by landfill, the latter being in theory the last option in the waste management hierarchy[22]. The EU target is to landfill no more than 10% of municipal waste by 2035[23]. Since the percentages recorded in the different territories are the result of regional waste management policies and the effect of extra-regional waste inflows and outflows, the assessment with reference to the 10% target is only applicable at national level.
Over the past 10 years, the percentage of municipal waste going to landfills, which has a high impact on the environment and human health, has more than halved at an average annual rate of - 2.4%. In 2020, 20.1% of total municipal waste was landfilled; it was 20.9% in 2019 and 46.3% in 2010 (Figure 15).
The share was well below the average in the North-west and the North-east, the Centre and the South had trends and values closer to the average, while the Islands had much higher shares; these values, as mentioned above, are gross of inflows and outflows from the regions and subdivisions and therefore do not allow an assessment of the performance of the territories.

Figure 15. Municipal waste sent to landfills by geographic area. Years 2010-2020. Percentage values



Source: Istat, Processing of data from Ispra

22 Directive 2008/98/EC establishes a hierarchy of priorities in waste management for measures to protect the environment and human health and also to reduce the overall impacts of resource use. The hierarchy ranges from prevention, preparation for re-use, recycling, other recovery (e.g. energy) to disposal.

23 As stipulated in Directive 2018/850/EU, of the circular economy package, amending Directive 1999/31/EC on the landfill of waste, transposed by Legislative Decree No. 121 of 03/09/2020.

Complete overview of contaminated sites still difficult

In 2020, there were 31,686 sites in Italy contaminated[24] by substances such as asbestos, dioxins, hydrocarbons, pesticides, PFAS (perfluoroalkyl substances), of which 31,645 were under regional jurisdiction and 42 under national jurisdiction (Sites of National Interest).
Contaminated areas amount to 237,136 hectares, distributed over all Italian regions, although the phenomenon tends to polarise between the North (152,586 hectares) and the South and Islands (64,716 hectares). In absolute terms, Piemonte is the region with the largest extension of contaminated surface area (108,277 hectares) followed by Sardegna, Lombardia, Friuli-Venezia Giulia, Puglia and Toscana, which have contaminated surfaces of more than 10,000 hectares. In relative terms, on the other hand, while Piemonte is confirmed as the region with the highest percentage of contaminated territory in relation to the total surface area (4.27%), significant portions of contaminated areas can also be found in Friuli-Venezia Giulia (1.84%), Sardegna (1.24%) and Lombardia (0.93%), with values above the national average (0.79%).
Again with reference to the year 2020, in all Italian regions (with the exception of the autonomous province of Bolzano and Molise) 42 Sites of National Interest were identified for an extension of 171,211 hectares of contaminated land surface. These are, in most cases, areas affected by the impacts of pre-existing or still active industrial and mining activities. Compared to 2019, a new Site was identified[25], although not yet defined, in the Campania region, called "Area vasta di Giugliano".
The Sites of National Interest were concentrated in the North with 20 sites and 116,234 hectares of contaminated surfaces, and in the Southern Italy with 17 sites and 45,509 hectares of contaminated surfaces, among which the most important in terms of extension were the site of Casale Monferrato (73,895 hectares) in Piemonte, the site of Cengio e Saliceto (22,249 hectares) in Liguria and the site of the Sulcis-Iglesiente-Guspinese mining district (19,751 hectares) in Sardegna.
Despite their undoubted informative power at national and local level, even for the year 2020 the data provided by the relevant regional authorities were incomplete and did not provide an exhaustive picture of contamination in Italy in terms of both the progress of remediation and the extent of the areas, particularly for sites under regional jurisdiction in Piemonte, Veneto, Liguria, Abruzzo, Calabria and Sicilia.

The share of renewable energy continued to increase in 2020

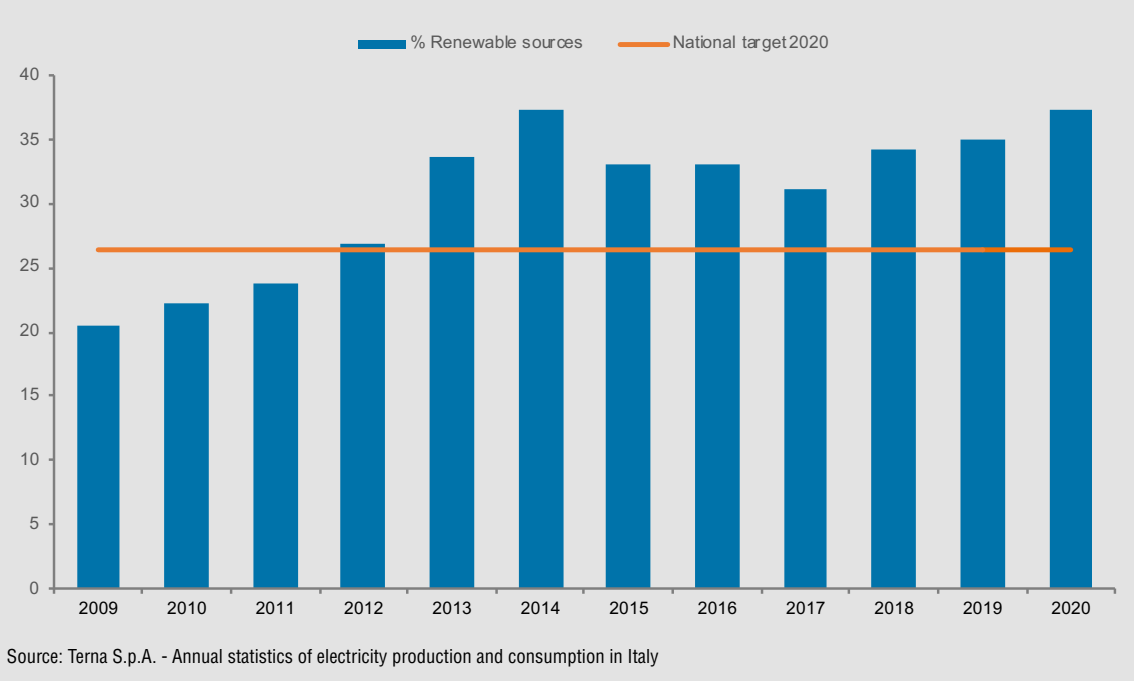
Since 2017, the consumption of electricity generated from renewable energy sources (hydroelectric, biomass thermal, geothermal, wind and photovoltaic) as a percentage of gross domestic electricity consumption has been steadily increasing, reaching 37.4% in 2020. The target of 26.4% set for 2020 has therefore been far exceeded[26] (Figure 16).

24 The identification, definition of the perimeter and remediation of contaminated sites are the responsibility of the Regions. The competence of the sites defined as being of "national interest" (Nis) for the purposes of remediation, identified by Article 252, paragraph 1 of Legislative Decree 152/06 and subsequent amendments and additions, is delegated to the Ministry of Ecological Transition in relation to the characteristics of the area, the quantity and hazardousness of the pollutants present and the significance of the impact on the surrounding environment in terms of health and ecological risk.

25 Law no. 120 of 11.09.2020.

26 The target is set by the National Renewable Energy Action Plan (NREAP), which complies with Directive 2009/28/EC.

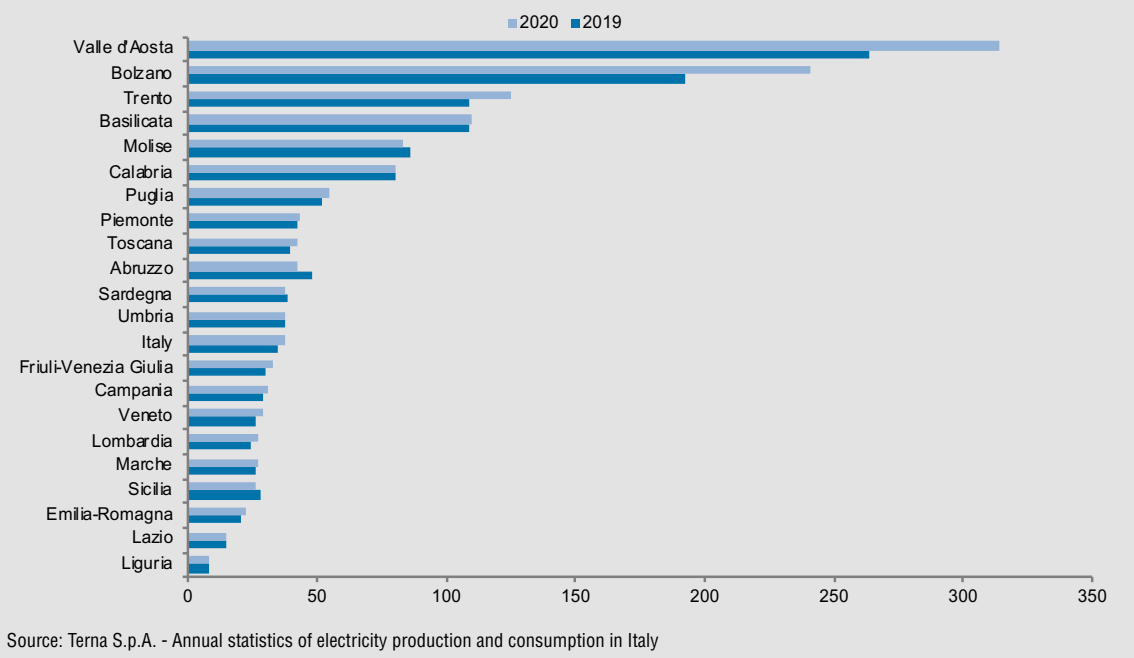
Figure 16. Electricity consumption from renewable sources. Years 2009-2020. Percentage values on the gross domestic consumption of electricity



Source: Terna S.p.A. - Annual statistics of electricity production and consumption in Italy

In 2020, the demand for electricity (302.7 TWh) was lower overall (-5.3%) than in 2019[27], production from renewable sources increased by about 1%, mainly due to the increase in photovoltaic energy production.
Figure 17 shows the regional distribution of electricity consumption from renewable energy

Figure 17. Electricity consumption from renewable energy sources by region. Year 2019 and 2020. Percentage values on the gross domestic consumption of electricity



Source: Terna S.p.A. - Annual statistics of electricity production and consumption in Italy

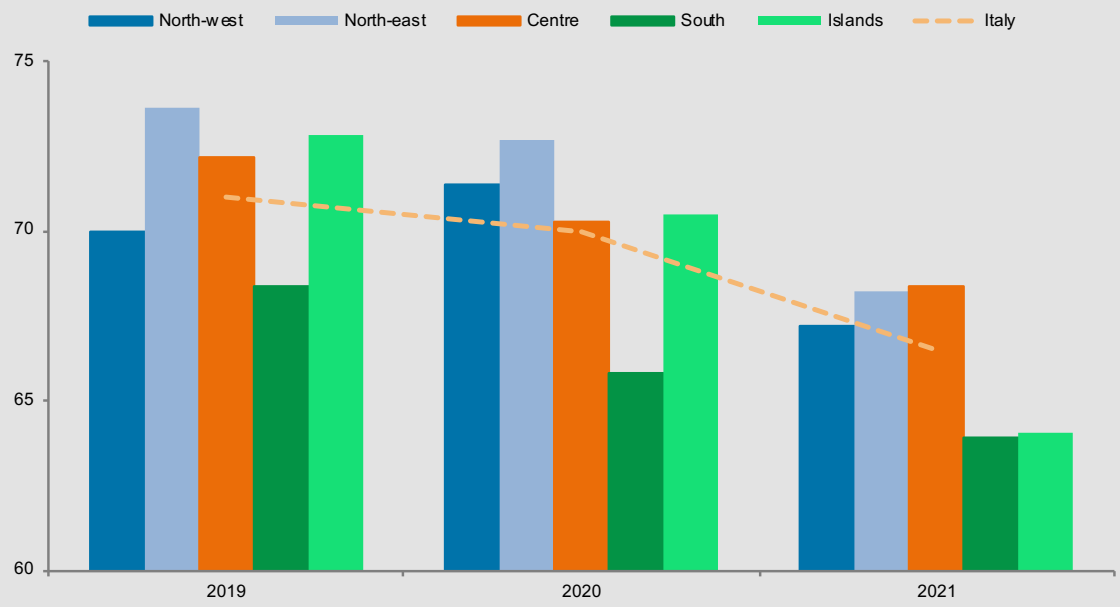
27 Terna S.p.A. - Monthly Report on the Electricity System, December 2020.

sources for the years 2019 and 2020. In Valle d'Aosta, the autonomous provinces of Bolzano and Trento and Basilicata, this consumption exceeds the gross domestic energy consumption mainly due to the high hydroelectric energy production in these territories.

Concern for climate change and the greenhouse effect drops to 2018 levels

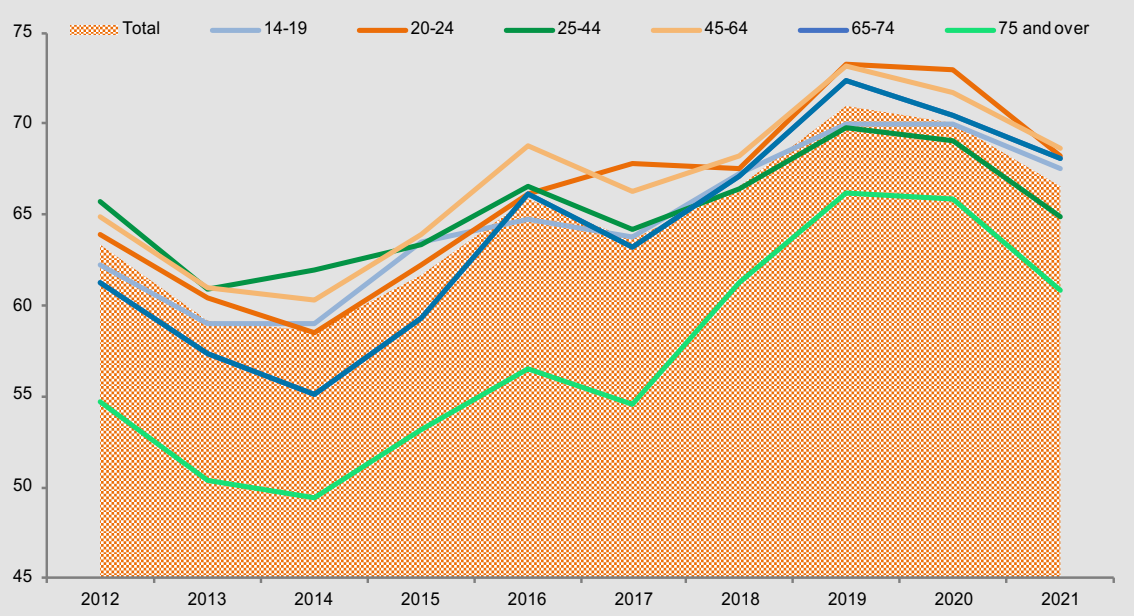
The effects of climate change and the increasing greenhouse effect are one of the environmental problems that people are most concerned about. However, while until the pre-pandemic year (2019) the percentage of people who consider this to be one of the main environmental problems was steadily increasing, there is a reversal in the 2020-2021 period (from 71% in 2019 to 66.5% in 2021 of people aged 14 and over). This decrease was most significant in the North-east from 73.6% to 68.2% and in the Islands, it decreased from 72.8% to 64.1% (Figure 18).
In 2021, the level of interest in these issues returned to that recorded in 2018 (66.6%), showing an increase in attention in conjunction with the global protest movements of 2019-2020. Furthermore, it is reasonable to assume that concerns about the pandemic and consequently the economic crisis were preponderant.
The greatest sensitivity to climate change issues was observed in the regions of the Centre (68.3%, with Toscana at 70.1%) and the North-east (68.2%, with the Autonomous Province of Trento at 69.5%), while concern was lower in the regions of the South (63.8%), with Campania (61.6%) and Calabria (60.4%) having the lowest shares, Molise standing out with 70.3%.
The differences between age groups regarding concern for these environmental issues among those aged 14 to 64 have been decreasing over the years and were insignificant in 2021. On the other hand, people aged 75 and over showed a consistently lower percentage

Figure 18. Concern about climate change and/or the increase in the greenhouse effect by geographic area. Years 2019-2021. Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life

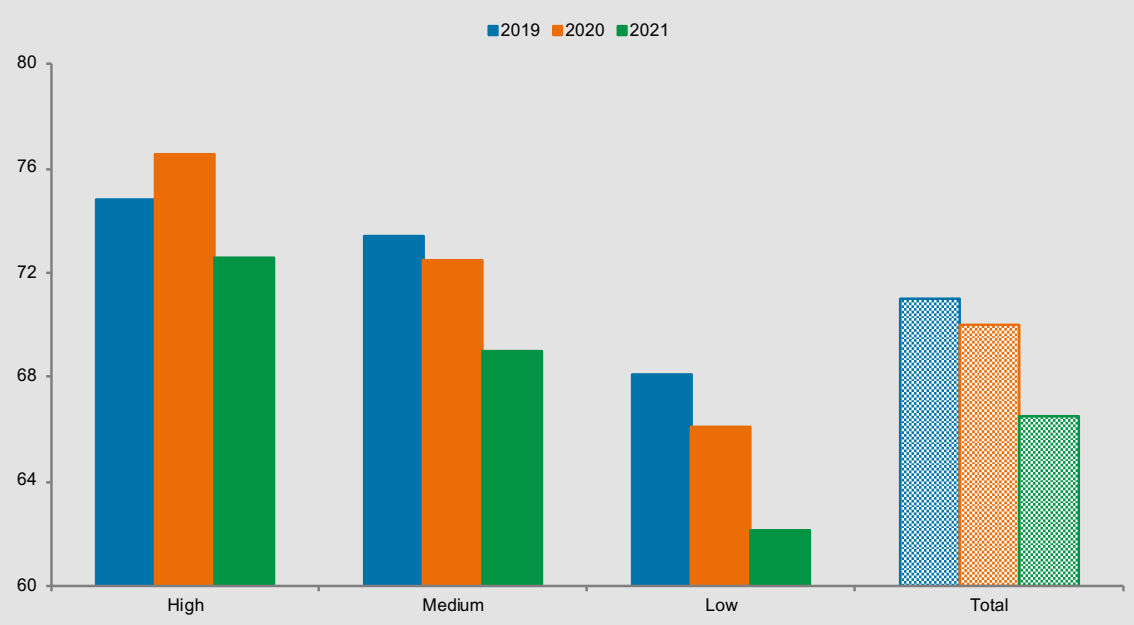
Figure 19. Concern about climate change and/or the increase in the greenhouse effect by age group. Years 2012-2021. Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life

of interest in these issues than the average (Figure 19).
Concern for climate change was strongly associated with educational attainment, and the decline in such sensitivity over the pandemic period was greater among those aged 14 and over with low educational attainment (- 6 percentage points) than among those with medium and high educational attainment (Figure 20).

Figure 20. Concerned about climate change and/or the increase in the greenhouse effect by level of education. Years 2019-2021. Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life

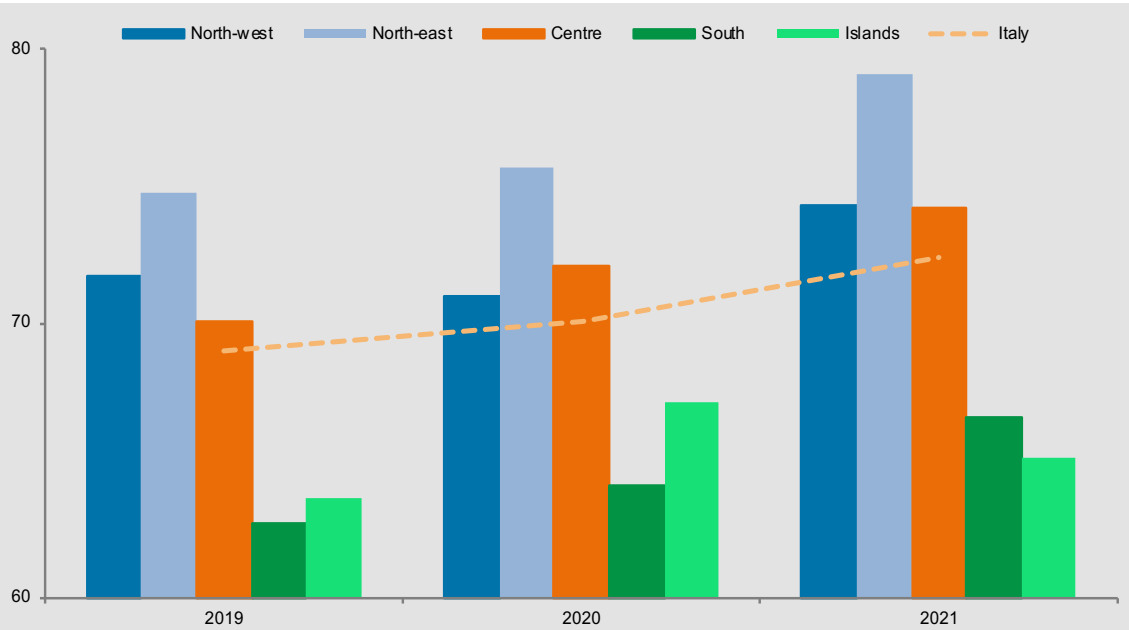
Satisfaction with the environmental situation of the area where people live is increasing

Compared to the pre-pandemic year, in 2021 the growth already recorded in 2020 in the percentage of populations declaring themselves to be very or fairly satisfied with the environmental situation in the area where they live continued (72.4% and 70.1% respectively, compared to 69% in 2019).

Satisfaction that in 2021 was expressed by about eight out of ten North-eastern residents, especially in the autonomous provinces of Trento and Bolzano (91.5% and 85.6% respectively) and in Friuli-Venezia Giulia (86.5%). In the North-west and the Centre, on the other hand, the share was slightly above average, while in the South and the Islands it was still below 70% with the lowest percentages in Campania (60.2%), Sicilia (60.5%) and 63.9% in Puglia (Figure 21).

Significant, though not very marked, differences related to age and gender: satisfaction was more widespread among 14-19-year-olds (76.7%) and especially among males (77.9%), while no significant differences emerged in relation to the respondents' educational qualifications.

Figure 21. Satisfaction with the environmental situation in the area where people live by geographic area. Years 2019-2021. Per 100 persons aged 14 and over



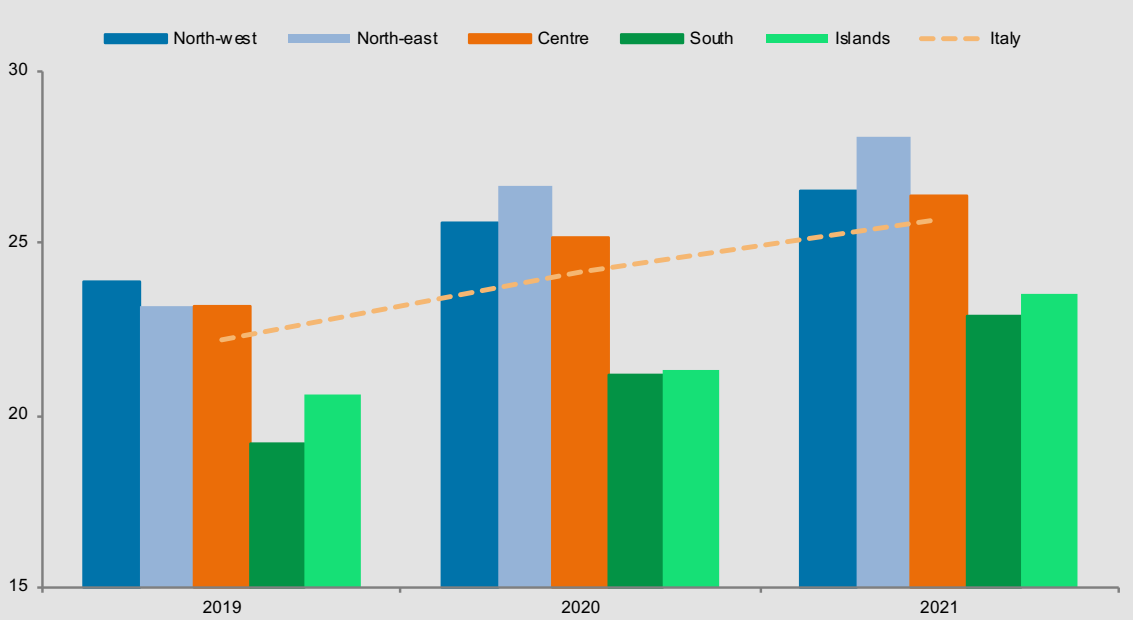
Source: Istat, Survey on Aspects of daily life

Slowly growing concern for biodiversity loss

The slow growth in the percentage of people aged 14 and over who were concerned for biodiversity loss, i.e. the disappearance of animal and plant species, continued in 2021 (25.7%, it was 24.2% in 2020 and 22.2% in 2019). This increase was observed with almost homogeneous intensity in all areas of the Country, even if the highest percentages were found in the North-east regions, followed by those in the North-west and the Centre, while those in the South and the Islands were below average (Figure 22).

With decreasing age and increasing educational qualifications, sensitivity to the issue of biodiversity loss increases. With respect to age, an upward trend was observed in all age

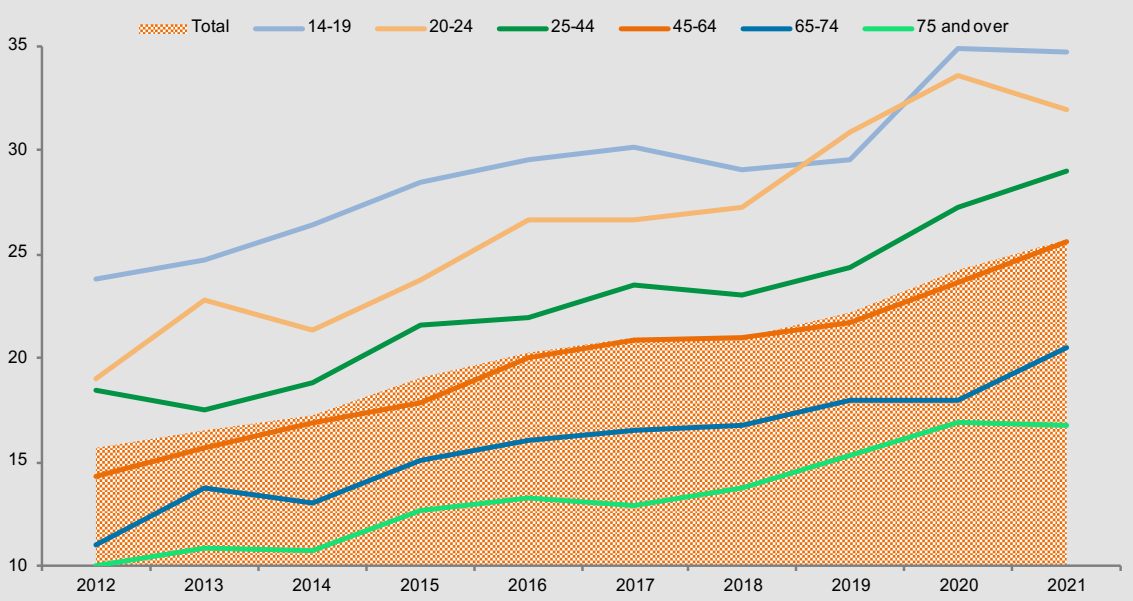
Figure 22. Concern about biodiversity loss by geographic area. Years 2019-2021. Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life

groups up to 2020, in 2021 the growth continued only for the percentage of people between 25 and 74 years of age, while substantial stability was observed among younger and older people (Figure 23).

Figure 23. Concern about biodiversity loss by age group. Years 2012-2021. Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life

Indicators

1. **Air quality - $PM_{2.5}$:** Percentage of valid measurements above the WHO health reference value (10 µg/m³) out of the total number of valid measurements of annual average $PM_{2.5}$ concentrations for all station types (urban and suburban traffic, urban and suburban industrial, urban and suburban background, rural).
   Source: Istat - Processing of data from Ispra
2. **Emissions of CO2 and other greenhouse gases:** Emissions of CO_2 and other greenhouse gases of the Italian economy expressed in tons of CO_2 equivalent per capita). Source: Istat-Ispra - Accounts and air emissions inventory.
   Source: Istat-Ispra - Accounts and air emissions inventory
3. **Warm Spell Duration Index:** Warm spell duration index (WSDI) is defined as annual or seasonal count of days with at least 6 consecutive days when the daily maximum T exceeds the 90th percentile in the calendar 5-day window for the base period 1981-2010.
   Source: Copernicus - European Union's Earth Observation Programme - Gridded dataset of climate reanalysis, ERA5 hourly data
4. **Extreme precipitation events:** Frequency of daily rainfall exceeding 50 mm/day.
   Source: Copernicus - European Union's Earth Observation Programme - Gridded dataset of climate reanalysis, ERA5 hourly data
5. **Consecutive Dry Days:** Maximum number of consecutive dry days per time period with daily precipitation amount of less than 1 mm.
   Source: Copernicus - European Union's Earth Observation Programme - Gridded dataset of climate reanalysis, ERA5 hourly data
6. **Population at risk of landslides:** Percentage of population resident in areas subject to high and very high landslide hazard, identified on the basis of the ISPRA National Mosaicature of the Hydrogeological Planning Plans (PAI) and its updates. The population considered is that of the 2011 Census.
   Source: Ispra - Hydrogeological instability in Italy: hazard and risk indicators
7. **Population at risk of flood:** Percentage of population resident in medium flood hazard zones (Return period 100-200 years; D. Lgs. 49/2010), identified on the basis of the ISPRA National Mosaicature of the Hydrogeological Planning Plans (PAI) and its updates, with reference to risk scenario P2. The population considered is that of the 2011 Census.
   Source: Ispra - Hydrogeological instability in Italy: hazard and risk indicators
8. **Water losses in urban supply system:** Percentage of the total volume of water losses in municipal drinking water supply networks (difference between volumes fed into the network and supplied authorised volumes) on total water input.
   Source: Istat - Urban Water Census
9. **Sewage treatment:** Percentage of polluting loads collected in secondary or advanced plants, in equivalent inhabitants, compared to the total urban loads (Aetu) generated.
   Source: Istat - Urban Water census; Survey on urban environmental data
10. **Protected natural areas:** Percentage share of terrestrial protected natural areas included in Italian Official List of Protected Areas (Euap) and Natura 2000 Network.
    Source: Istat - Processing of data from Ministry of the Ecological Transition
11. **Coastal bathing waters:** Percentage of authorized coastal bathing waters on the total of the coastal line in accordance with the regulations in force.
    Source: Istat - Processing of data from Ministry of Health
12. **Urban green:** Square meters of urban parks and gardens per inhabitants in provincial capital Municipalities.
    Source: Istat - Survey on urban environmental data
13. **Soil sealing from artificial land cover:** Percentage of soil sealed following a change from non-artificial to artificial coverage.
    Source: Ispra - Soil consumption, territorial dynamics and ecosystem services
14. **Domestic material consumption:** Domestic material consumption measures the quantity of matter, other than water and air, used every year by the socio-economic system and released into the environment (incorporated into emissions or effluents) or accumulated in new anthropogenic stocks (both capital goods and other durable goods and waste).
    Source: Istat - Material flow accounts
15. **Municipal waste generated:** Municipal waste generated per capita (in Kg).
    Source: Istat - Processing of data from Ispra
16 **Landfill of waste:** Percentage of municipal waste sent to landfill on total municipal waste collected.
    Source: Ispra - Waste statistics
17 **Contaminated sites:** Size of contaminated sites.
    Source: Ministry of the Ecological Transition - Processing of data from Ministry of the Ecological Transition and Ispra
18. **Electricity from renewable sources:** Percentage of energy consumption provided by renewable sources on gross electricity consumption. The indicator is calculated as the ratio between the gross electricity production from RES (actual, non-normalized) and the gross domestic consumption of electricity (e.g. the gross production of electricity, including pumping, plus trade balance).
    Source: Terna S.p.A. - Annual statistics of electricity production and consumption in Italy
19. **Concern for climate change:** Percentage of people aged 14 and over who believe that climate change, greenhouse effect and ozone hole are among the five most important environmental problems.
    Source: Istat - Survey on Aspects of daily life
20. **Satisfaction for the environment:** Percentage of people aged 14 and over very or quite satisfied of the environmental situation (air, water, noise) of the area where they live.
    Source: Istat - Survey on Aspects of daily life
21. **Concern for biodiversity loss:** Percentage of people aged 14 and over who believe that biodiversity loss is among the five most important environmental problems.
    Source: Istat - Survey on Aspects of daily life

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	Air quality - $PM_{2.5}$ (a) 2020	Emissions of CO_2 and other green-house gases (b) 2020 (*)	Warm Spell Duration Index (c) 2021	Extreme precipita-tion events (c) 2021	Consec-utive Dry Days (c) 2021	Popo-lation at risk landslide (d) 2020	Popolation at risk of flood (d) 2020	Water losses in urban supply system (e) 2018	Sewage treatment (f) 2015
Piemonte	94.3	....	12.0	-	16.0	1.9	4.9	36.0	69.7
Valle d'Aosta/Vallée d'Aoste	100.0	....	12.0	-	16.0	12.1	9.1	22.1	66.0
Liguria	67.9	....	5.0	1.0	16.5	5.9	17.4	40.6	61.2
Lombardia	97.0	....	-	1.0	21.0	0.5	4.4	29.8	62.9
Trentino-Alto Adige/ Südtirol	91.7	....	-	-	21.5	2.1	18.0	31.1	78.9
Bolzano/Bozen	*100.0*	....	-	-	*19.0*	*2.3*	*9.8*	*26.9*	*99.7*
Trento	*83.3*	....	*3.0*	*0.5*	*22.5*	*2.0*	*25.9*	*33.9*	*63.6*
Veneto	100.0	....	-	-	21.0	0.1	11.7	40.9	49.4
Friuli-Venezia Giulia	85.7	....	6.0	3.0	18.0	0.4	9.9	45.7	50.7
Emilia-Romagna	89.4	....	7.0	-	21.0	2.0	62.5	31.2	67.7
Toscana	76.5	....	22.0	-	22.0	4.2	25.5	42.8	49.5
Umbria	76.2	....	21.0	-	22.0	2.0	7.2	54.6	68.7
Marche	66.7	....	7.0	1.0	24.0	2.2	5.2	33.9	48.5
Lazio	68.0	....	21.0	-	31.0	1.6	3.2	53.1	67.0
Abruzzo	81.8	....	24.0	-	20.0	5.6	7.2	55.6	63.9
Molise	33.3	....	23.0	-	28.0	6.1	2.3	45.6	58.0
Campania	89.3	....	24.5	1.0	35.0	5.0	5.1	45.5	60.5
Puglia	83.0	....	25.0	-	30.0	1.4	3.4	45.1	68.3
Basilicata	40.0	....	24.0	-	31.5	7.0	1.1	45.1	67.2
Calabria	40.0	....	28.0	1.0	34.0	3.3	12.8	44.9	46.0
Sicilia	50.0	....	16.0	-	39.0	1.8	2.6	50.5	43.9
Sardegna	30.3	....	22.0	-	47.0	1.3	7.5	51.2	58.8
North	91.1	....	6.0	-	20.0	1.3	16.6	34.3	62.4
North-west	90.3	....	6.0	1.0	18.0	1.5	5.9	32.5	64.6
North-east	92.0	....	6.0	-	21.0	1.0	31.4	32.5	59.6
Centre	71.7	....	21.0	-	23.5	2.5	10.8	48.7	58.5
South and Islands	61.8	....	23.0	-	36.0	3.2	5.1	47.9	56.7
South	72.3	....	25.0	-	32.0	3.9	5.6	46.5	60.9
Islands	37.3	....	19.0	-	46.0	1.7	3.8	50.7	47.8
Italy	77.4	6.6	14.0	-	24.0	2.2	11.5	42.0	59.6

(a) Percentage of valid measurements above the WHO defined reference value (10 µg/m³) of total valid measurements of annual average concentrations of $PM_{2.5}$;
(b) Tonnes of CO_2 equivalent per capita;
(c) Number of days;
(d) Percentage on total population;
(e) Percentage of water input into the network;
(f) Percentage of the urban pollution loads generated;
(g) Percentage of land area;
(h) Percentage of authorized bathing waters on the total of the coastline;
(i) Square meters per capita;

Protected natural areas (g)	Costal bathing waters (h)	Urban green (i)	Soil sealing from artificial land cover (l)	Domestic material consumption (m)	Municipal waste production (n)	Landfill of urban waste (o)	Contaminated sites (p)	Electricity from renewable sources (q)	Concern for climate change (r)	Satisfacion for the environment (r)	Concern for biodiversity loss (r)
2017	2019	2020	2020	2020 (*)	2020	2020	2020	2020	2021	2021	2021
16.7	-	26.4	6.7	....	486	12.6	42.7	43.5	66.2	73.8	26.5
30.3	-	19.1	2.1	....	609	38.2	0.7	314.5	64.9	86.2	28.9
27.2	57.4	18.3	7.2	....	520	36.2	5.1	8.3	65.3	76.8	28.3
16.1	-	26.6	12.1	....	468	3.5	8.2	27.3	67.9	74.1	26.2
26.4	-	300.3	3.1	....	475	12.3	0.4	180.1	66.9	88.6	29.9
24.5	-	*193.7*	*2.7*	....	*464*	*2.2*	*0.3*	*241.1*	*64.1*	*85.6*	*31.1*
28.7	-	*396.2*	*3.7*	....	*486*	*21.8*	*0.6*	*125.3*	*69.5*	*91.5*	*28.7*
23.0	64.2	34.0	11.9	....	476	14.7	1.7	29.3	68.6	77.8	28.3
19.3	42.2	65.0	8.0	....	496	11.4	18.4	33.1	67.3	86.5	26.8
12.2	61.7	45.5	8.9	....	639	9.2	1.7	22.1	68.2	76.3	27.9
15.2	71.3	23.7	6.2	....	583	36.4	5.1	42.7	70.1	78.0	28.4
17.5	-	99.3	5.3	....	506	37.0	0.8	37.6	66.5	76.7	27.7
18.8	73.2	31.9	6.9	....	500	48.1	0.2	26.8	69.3	82.0	25.0
27.9	69.5	21.7	8.1	....	490	15.7	4.2	15.3	67.2	69.3	25.5
36.6	75.5	27.3	5.0	....	454	29.2	0.6	42.4	67.5	80.8	28.4
26.4	71.9	10.1	3.9	....	367	79.3	0.3	83.0	70.3	82.7	24.6
35.3	70.0	14.3	10.4	....	452	1.6	5.8	31.4	61.6	60.2	23.2
24.5	74.7	9.5	8.2	....	469	33.7	6.5	54.7	66.8	63.9	21.3
22.8	90.8	103.0	3.2	....	344	19.0	4.0	109.6	64.3	76.3	20.8
26.6	85.3	41.8	5.1	....	381	27.4	0.7	80.1	60.4	75.7	22.3
20.2	50.8	15.3	6.5	....	443	58.9	3.2	26.0	63.3	60.4	21.2
19.9	64.9	37.1	3.3	....	445	23.4	12.4	37.6	66.3	78.7	30.1
18.8	56.9	40.8	8.6	....	505	10.6	12.7	27.3	67.6	76.3	27.2
18.1	57.4	25.1	8.7	....	479	9.7	22.6	....	67.2	74.3	26.5
19.7	56.5	62.2	8.4	....	541	11.7	3.5	....	68.2	79.1	28.1
20.0	71.1	27.2	6.7	....	522	28.4	3.4	30.2	68.3	74.2	26.5
25.2	65.8	20.3	5.9	....	442	29.2	5.2	45.6	63.9	66.1	23.1
29.0	77.0	20.8	6.5	....	444	19.2	3.6	....	63.8	66.5	22.9
19.6	58.5	19.5	5.0	....	441	50.1	7.6	....	64.1	65.0	23.4
21.6	**65.5**	**31.0**	**7.1**	**458.7**	**487**	**20.1**	**7.9**	**37.4**	**66.5**	**72.4**	**25.7**

(l) Percentage of land area;
(m) Milions tonnes;
(n) Kilograms per capita;
(o) Percentage of total municipal waste collected;
(p) Land area affected, values per 1,000;
(q) Percentage of total internal consumption;
(r) Per 100 persons aged 14 anni and over;
(*) Provisional data.

11. Innovation, research and creativity[1]

Investments in scientific research and technological innovation, the human capital available and actually employed in knowledge economy, and the diffusion of ICT technologies are key drivers of well-being and economic growth.
The pandemic crisis has clearly highlighted the relevance of research, innovation, and the dissemination of digital technology; the new reforms envisaged by the National Recovery and Resilience Plan (NRRP) will focus on these aspects in the coming years, aiming, among other objectives, to foster the recovery of investments and, in particular, of the intangible ones (research and development, software, etc.), bridging the gap between Northern and Southern Italy in terms of capacity to produce and apply new knowledge. Digital transition is also one of the NRRP's three strategic axes, with measures aimed at the digitalisation of the public administration, the judicial system, and the health system; the modernisation of businesses; and enhancement of citizens and workers' ICT skills[2].
The indicators in the domain account for the slow progress made by Italy over the years, and for its lagging behind the main European countries and the EU average, attesting to the strong territorial disparities and the weakness of the South and Islands, all aspects that structurally characterise the Italian system of research, innovation and digitalisation.
The impact of the COVID-19 crisis on the processes of intangible capital accumulation has been strong, with the immediate collapse of firms' investments in research and development.
In the labour market crisis triggered by the pandemic, higher-skilled employment had a protective effect, and the weight of knowledge workers in total employment, traditionally lower than the European average, did not decline. In contrast, cultural employment was hit hard already in 2020 and showed no signs of recovery in 2021. The Country's low capacity to retain qualified human resources was confirmed, even in 2020, by the migration of young graduates, which continued despite uncertainty and travel restrictions.
The pandemic has accelerated the spread of ICT. In 2020 and 2021, the regular use of the Internet increased, even among older people; the number of enterprises selling via the web to end customers also increased; the availability to municipalities of those digital technologies that are necessary for the development of online services increased considerably. However, the digital divide remains large.

There is confidence in science, but the territorial picture is complex

The global challenge of the pandemic has brought to the attention of citizens that scientific research is a strategic tool for finding answers to needs and problems that could not otherwise be solved.
The trust of Italian citizens aged 14 and over in scientists, monitored for the first time in the

1 This chapter was edited by Stefania Taralli, with contributions from: Francesca Licari, Valeria Mastrostefano, Alessandra Nurra and Laura Zannella. The focus on "The technological evolution of Municipal administrations between 2017 and 2020" is by Elisa Berntsen and Alessandra Nurra.

2 About 25% of the resources allocated by the NRRP are earmarked for the digital transition. About one-third of the resources allocated to Mission 1 of the NRRP are earmarked for research and development activities. See: https://italiadomani.gov.it/it/home.html

2021 edition of ISTAT's survey on Aspects of daily life, is quite high: the average score, on a scale from 0 to 10, is 7.3, similar to the score assigned to physicians and health personnel, and in line with the levels of trust in the police and the fire brigade. More than half of the respondents (52.9%) assign a score of 8 or higher.
As observed for other trust indicators, high scores prevail among young and better-educated people. The gap between those with low educational qualifications and the better educated is particularly wide: among the former, the average mark is 7.2 out of 10 and the proportion of marks equal or higher than 8 does not reach half of the respondents; on the other hand, among those with a university degree, the average mark rises to 7.7 and marks equal or higher than 8 are two out of three.
The territorial distribution is varied, with eight regions, both in the Centre-north and in the South and Islands, on levels below the Italian average. The absolute minimum is in the autonomous province of Bolzano, where the average score is 6.7 and just 41.0% of citizens aged 14 and over gave a score of 8 or higher. Lower levels are also recorded in Friuli-Venezia Giulia, Molise and Marche (Figure 1).

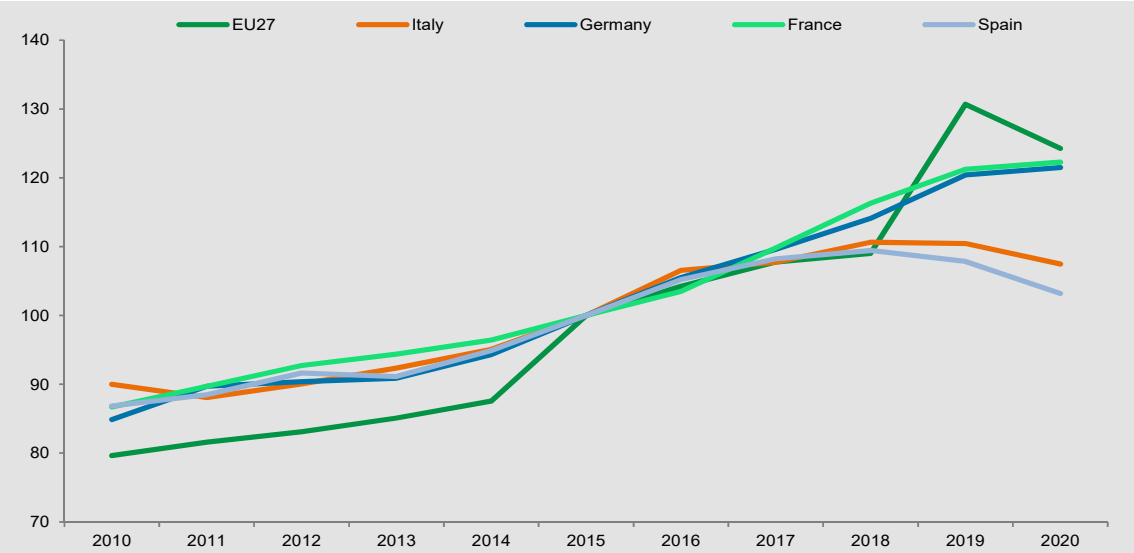
Figure 1. People aged 14 and over who gave a high score (8-10) **on trust in science** (left) **and average score** (right)**. Year 2021. Percentages and average score in tenths**

Source: Istat, Survey on Aspects of daily life

Investments in intangible capital fell back in the first year of the pandemic

After the strong acceleration recorded in Europe between 2018 and 2019, in 2020 the index of investments in intellectual property products (IPP) marked a sharp decline of the process of intangible capital accumulation, falling by -4.9% for the 27 European countries as a whole and -5.9% for the 19 eurozone countries. The setback was more modest for Italy (-2.7%), which, however - unlike France and Germany - had not fully caught up with the previous expansionary phase and showed a more moderate growth trend (Figure 2).
The dynamics of the latest available figures should be read in the context of the dramatic economic situation that characterised 2020, with the fall in GDP and the even more severe

Figure 2. Intellectual property products (as part of gross fixed capital formation) **in selected European countries - Years 2010-2020. Chain values, index numbers 2015=100**



Source: Eurostat database

contraction in overall gross capital formation[3]. In this context, the weight of IPP investments in relation to GDP and total investments remained at similar levels in 2019 for both the average of the 27 EU countries (5.0% and 22.8% respectively) and for Italy (3.2% and 18.1%). Therefore, the wide gap between Italy and the European average remains unchanged, confirming Italy's structural delay in intangible capital investments.
In Italy, 1.47 million Euro less was invested in intellectual property products in 2020 comparing to 2019; two-thirds of this loss is due to lower spending on research and development, one of the two main items of the aggregate, accounting for 45.8% of the total in 2020. On the other hand, investments in software and databases, which accounted for 51.2% of total IPP investments in 2020, had a smaller decline (-1.5%)[4].

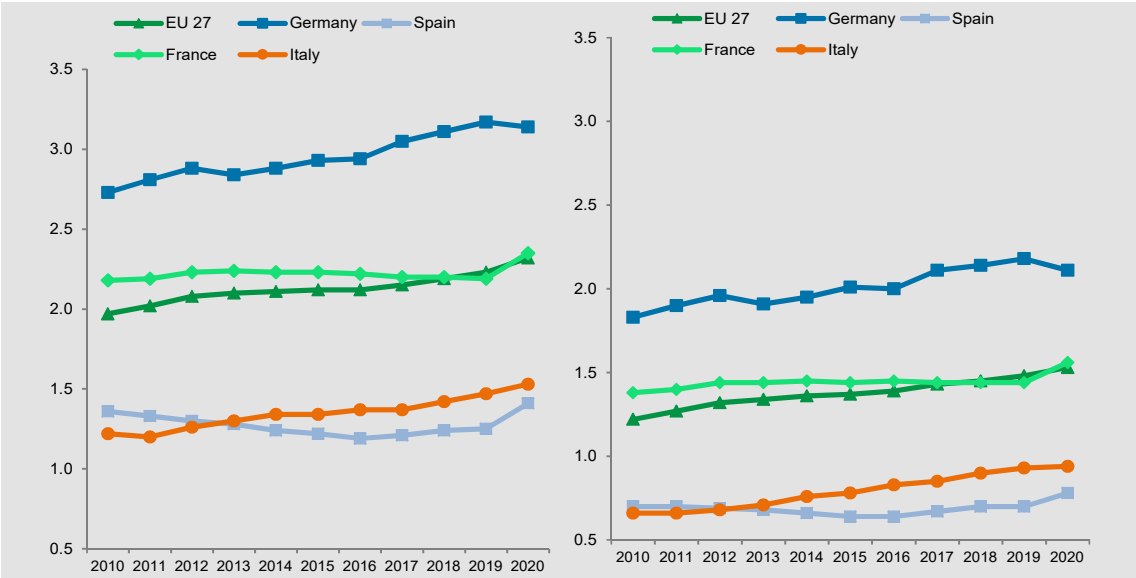
Private investment in research and development (R&D) collapsed in 2020

The investment crisis triggered by the pandemic, in Italy, has impacted on a system already characterised by a R&D intensity, that is much lower than in other major European economies, even though it has grown steadily over the years, both in the public and private sectors.
Based on the most recent results of the R&D surveys, in 2019 in Italy the total expenditure carried out by enterprises, public institutions, non-profit institutions and universities, amounting to around 26.3 billion Euro, increased by 4.1% compared to 2018 and also recorded an increase in terms of incidence on GDP, settling at 1.46% (+0.04 percentage points)[5]. The growth, recorded in all sectors, was most pronounced in the non-prof-

3 The annual contraction of GDP, measured at current prices, was -7.8% in Italy and -4.4% on average in the EU27. The change in total gross investment was -8.5% in Italy and -5.4% in the EU27 average.
4 The aggregate also includes expenditure on mineral exploration and evaluation, original artistic, literary or entertainment works, which in 2020 was worth 3.0% of the total.
5 For the national GDP data, the time series of the economic accounts updated to March 2022 were used.

it (+17.2%) and the public sector (+5.1%). In the business sector, the overall increase (+4.1%) was due to both the higher expenditure incurred during the year by companies that were already performing R&D and the start of R&D investments by new enterprises, whose R&D expenditure accounted for 3.0% of the 2019 total.
The year marked a sudden reversal of the positive trend. Preliminary data indicate an overall decrease in R&D expenditure of -3.4% compared to 2019, due entirely to the negative dynamics of business investment. The sharp contraction in the sector (-6.9%), however, was offset by increases in the non-profit sector (+10.8%), public institutions (+2.3%) and universities (+2.0%). The weight of the sectors has not changed substantially: the main share of *intra-mural* R&D expenditure continues to be that of companies, which, according to preliminary data, has invested 15.4 billion Euro in 2020, equal to 60.9% of total expenditure and 0.94% of GDP. Another important component was universities (23.7% of total expenditure); the public sector - excluding universities - had a lesser weight (13.3%), and the non-profit sector was residual (2.0%).
Compared to the general European picture, from the 2020 forecast data[6], Italy with 1.53% seemed to reach the national target defined within the Europe 2020 Strategy. The indicator's gain over the past year (+0.07 percentage points) is all due to the collapse recorded by GDP, which was greater than the fall in R&D investments.
Despite the different weight and composition of the indicator's assets, Italy's distance from the main European countries and the EU average remained substantially unchanged. Italy's gap can be especially seen in the low level of R&D investment financed by the private sector: although R&D intensity in this latter sector has grown steadily in Italy over the *Europe 2020* reference decade (from 0.66% in 2010 to an estimated 0.94% in 2020), at the end of the period it was still just over half of the European average (1.53%) and less than half of Germany (2.11% - Figure 3). However, Italy does not appear too far behind the major Eu-

Figure 3. Total expenditure on research and development (left) **and of companies** (right) **in Italy** (a)**, in the European Union and in selected European countries. 2010-2020** (b)**. Values as a percentage of GDP**



Source: Eurostat, Science and Technology Indicators.
(a) For Italy,break in time series in 2016 due to methodological innovations in the final estimates.
(b) 2020 data are preliminary.

6 The 2020 forecast data are the most recent available at European level. See https://ec.europa.eu/eurostat/databrowser/view/tsc00001/default/table?lang=en; consultation date 15 March 2022.

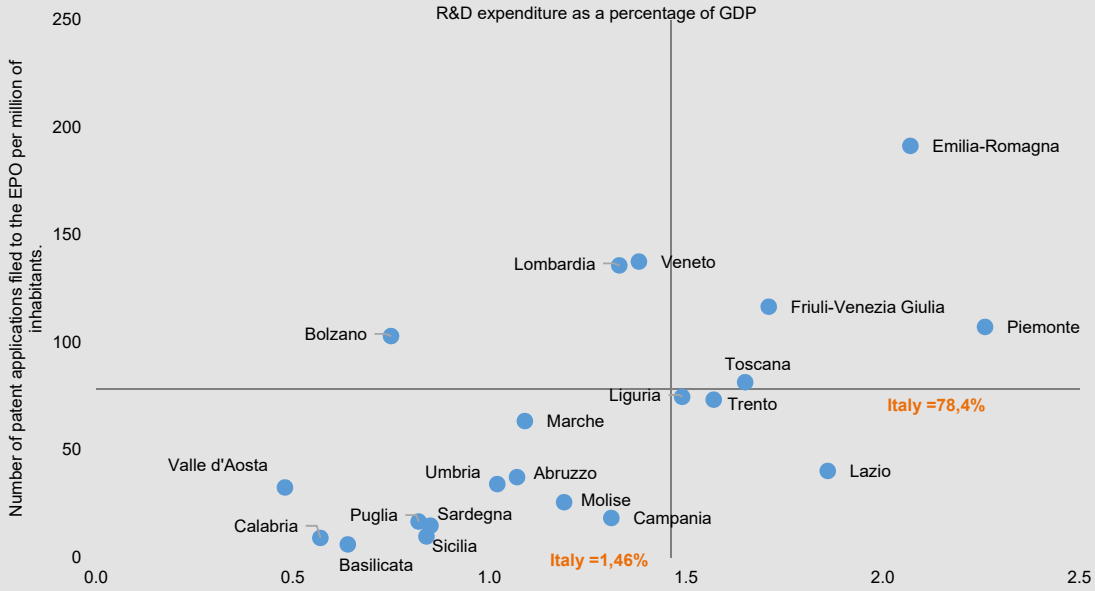
ropean countries in terms of the share of the enterprises spending on R&D on the total, and the weight of private R&D investment, which is indispensable for bridging the structural and long-term gap with the main European economies and for fostering a healthy economy with good growth prospects, has increased significantly compared to 2011, when it accounted for just over half of total spending (54.6 % against 60.9 % in 2020).
Forecasts for 2021[7] indicate a significant recovery in business R&D expenditure, with an increase of 6.2% compared to 2020, which, however, would not be enough to return to pre-pandemic levels. In fact, the R&D expenditure of businesses forecast for 2021 stopped at 16.4 billion Euro (-1.1% compared to 2019). On the other hand, in the public and the non-profit sector, the upward trend in R&D expenditure is expected to continue in 2021, with increases of 2.7% and 2.9% respectively compared to 2020.

Southern Italy lags far behind in investment in research and development

One of the cross-cutting goals of the National Recovery and Resilience Plan is to reduce territorial gaps in terms of economic growth and employment. R&D expenditure has always remained higly concentrated in the North. In 2019, the latest year for which regional data are available, more than 60% of investment was in the North, while South and Islands contributed 14.5%. Six regions made up three-quarters of the total expenditure (around EUR 20 billion): Lombardia (20.2%), Lazio (14.2%), Emilia-Romagna (12.9%), Piemonte (11.9%), Veneto (8.7%) and Toscana (7.5%). The territorial concentration was even greater for business R&D expenditure: more than 80% of the activities were carried out in the six regions just mentioned; the regions of Southern Italy, on the other hand, accounted for just 9.9%. Concerning R&D expenditure of the public sector (excluding universities), Lazio holds the record and accounted for 42.8% of the whole sector, while more than half of the R&D expenditure of universities is in just five regions (Lombardia, Lazio, Emilia-Romagna, Toscana and Veneto). Finally, the share of non-profit institutions involved in R&D activities is higher in Lombardia, Lazio and Piemonte, where 60.9% of the sector's R&D expenditure is concentrated.
Considering the ratio of R&D expenditure to GDP[8], in 2019 the value for the South and Islands (0.96%) was around two-thirds of the Italian figure (1.46%). R&D intensity did not exceed the national level in any region of the South and the Islands (Figure 4).
The lower R&D intensity is also clearly associated with the limited patent propensity. All the southern regions together with Valle d'Aosta, Umbria and Marche are in the group of regions lagging furthest behind on both indicators. At the far opposite of the distribution, the patterns are more articulated: Lombardia and Veneto, for example, have higher patenting rates than Piemonte and Friuli-Venezia Giulia and a lower R&D intensity; Lazio, with one of the highest R&D expenditures, shows a patent propensity well below the Italian average. These differences are also explained by the different weight of institutional sectors, scientific disciplinary field and type of research prevailing in the different regional systems, since patents are only one of the possible means of protecting intellectual property rights on the results of research and innovation activities.
In terms of patent propensity, Italy also continues to remain at much lower levels than the

7 *Intra-mural* R&D expenditure in 2021 was estimated on the basis of forecasts expressed by the surveyed enterprises and institutions during the survey period. Data on universities are not available.
8 The regional GDP data refer to the territorial economic accounts series published by Istat in December 2021.

Figure 4. Expenditure on research and development as a percentage of GDP (a) **and patent applications filed to the European Patent Office** (Epo) **per million inhabitants** (b)**, by region. Years 2018 and 2019**



Source: (a) Istat, Survey on R&D in companies; Research on R&D in non-profit organizations; Research on R&D in public bodies; (b) OECD, Regpat database, December 2021 edition (OECD)
(a) Year 2019.
(b) Year 2018.

EU27 average and the main European countries. In 2018, the indicator calculated for Italy was 78.4 applications per million inhabitants, about half European average[9] of 148.2, less than half the figure recorded for France (156.0 applications per million inhabitants), less than a quarter of Germany's indicator (321.6).

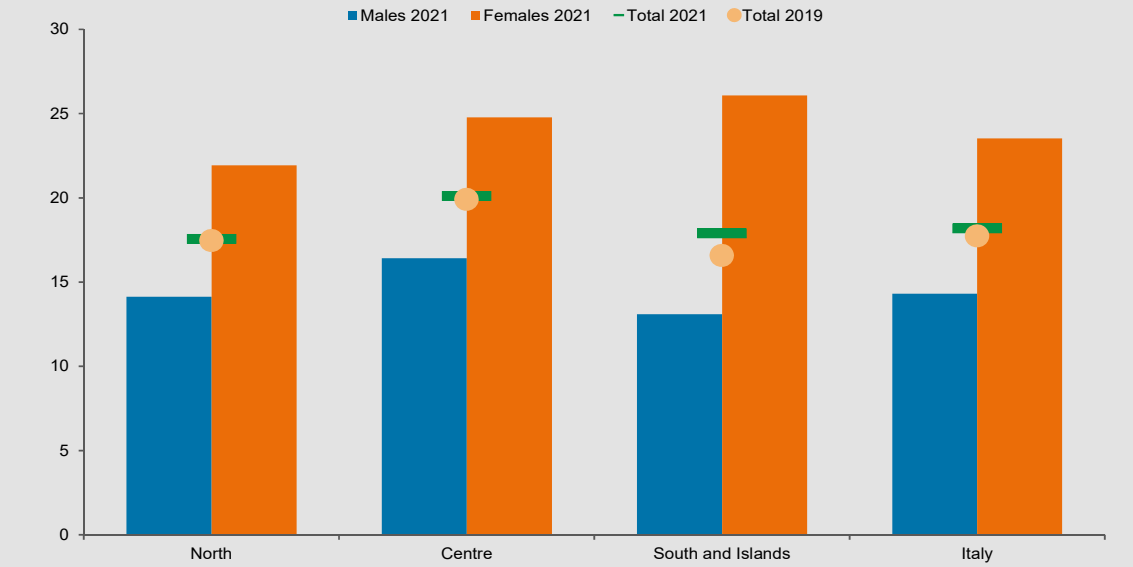
Knowledge workers increased during the COVID-19 crisis in Southern Italy

The employment downturn caused by the pandemic did not stop the growth of knowledge workers impact on employment, that has continued, albeit slowly, for years[10]. In 2020, the percentage of workers in scientific-technological professions and with a university qualification reached 18.3% of total employment (+0.6 percentage points compared to 2019), a level that is confirmed in 2021. The indicator's trend in the last two years is determined by the stability of the most qualified segment of the labour market facing the drop in the total number of employed persons in 2020 (about -3% compared to 2019), only partially recovered in 2021 (+0.75% compared to 2020).
The indicator continued to mark wide gender differences, with much higher levels for women, and particularly for those in the South and Islands, where more than one in four women employed (26.1% in 2021) was a knowledge worker (Figure 5).
The territorial differences, on the other hand, have become less pronounced because the

9 Eurostat data updated on 20/04/2021.
10 Starting in 2021, there is a break in the series due to the innovations introduced in the Labour Force Survey. For the years 2018-2021, analysed in this chapter, a reconstruction of the historical series has been carried out; the longer-term trend (2004-2020) is documented by the historical series previously disseminated.

growth of the last two years was all concentrated in the South and Islands, where the indicator, compared to 2019, gained +1.1 percentage points for men and as much as +2.1 points for women, reaching an overall level in 2021 (17.9%) that is almost in line with the national average and with the value for the North.

Figure 5. Employees with tertiary education (ISCED 6-7-8) **in scientific-technological occupations** (ISCO 2-3) **by gender and geographic area. Years 2019 and 2021. Values per 100 employees with the same characteristics**



Source: Istat, Labour force survey

The decline in cultural and creative employment is concentrated in the North-west and the South

The impact of the two-year pandemic restrictions on cultural and creative employment is strong and evident, most intense in the first year. In 2020, the number of employed fell by -8.0%, equal in absolute terms to a net loss of about 66,000 compared to 2019. The negative trend reversed in 2021, in line with the slight recovery in overall employment. The total balance at the end of the two-year period was -55 thousand employed, a relative loss of -6.7%, more than double the contraction in overall employment.

The weight of cultural and creative employment in total employment dropped from 3.6% in 2019 to 3.4% in 2021 (Figure 6).

The impact of the first year of the COVID-19 crisis was particularly strong on women employed in this sector, who accounted for 43.3% of total employment in 2019; over 31,000 lost their jobs in 2020, thus contributing to about half of the overall decline in cultural and creative employment in the first year. However, 2021 saw a recovery of more than a third of the female employment lost the previous year, in contrast to men. The overall loss between 2019 and 2021 for women stood at -5.3%.

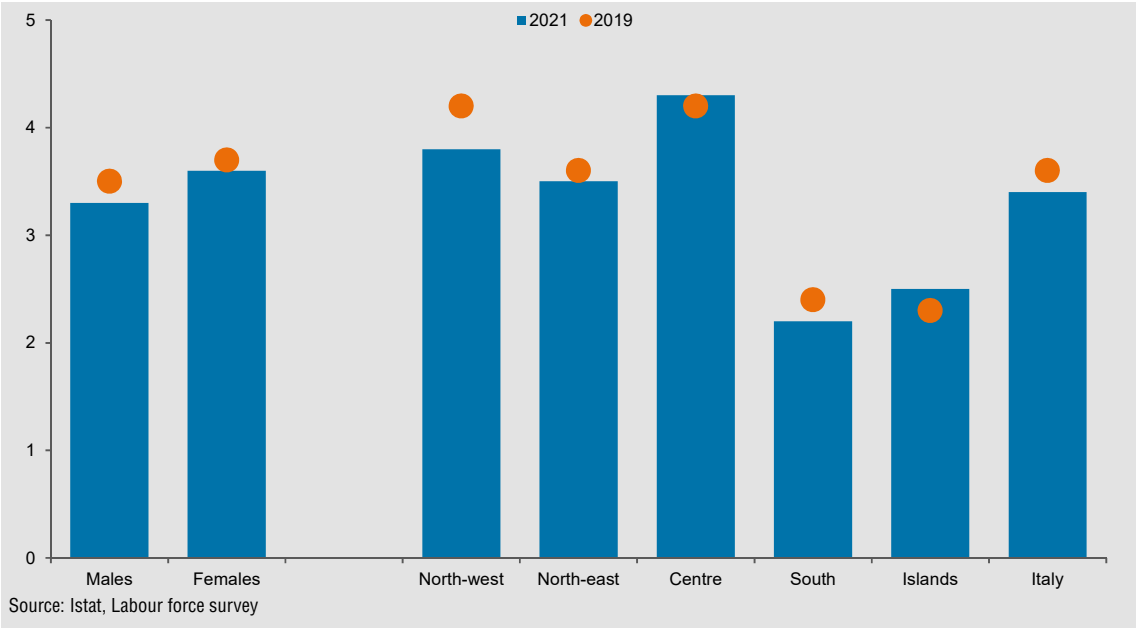
Men were thehardest hit over the two-year period, recording a -7.7% loss of employment in this sector between 2019 and 2021.

Territorial differences became more accentuated. In 2021, the gap between the Centre (4.3%), which remains the most vocated area, and the South (2.2%) was 2.1 percentage points.

The areas most affected by the employment crisis in the cultural and creative sector were

the North-west and the South, which between 2019 and 2021 recorded reductions in the number of people employed in the sector of 12.2% and 10.4% respectively. In the North-west the indicator went from 4.2% to 3.8%; in the South from 2.4% to 2.2%.

Figure 6. Employees in cultural and creative professions or sectors of activity by gender and age group. Years 2019 and 2021. Values per 100 employees with the same characteristics



Source: Istat, Labour force survey

Migration of young Italian graduates continued in the first year of the pandemic crisis

Despite the restrictions on mobility imposed during the first year of the pandemic and the uncertainty that characterised 2020, emigrations abroad by young Italian graduates have intensified compared to 2019, in stark contrast to the transfers of residence of the population as a whole, which instead recorded declines of varying magnitude[11].

The main directions of the flows of young graduates did not change, which continue to be towards foreign countries and from the South and Islands to the Centre-north.

At the national level the indicator, which considers the migration balance of young Italian citizens (25-39 years old) with a university qualification[12], was also negative in 2020: -5.4 per 1,000 residents of the same age and education level, a higher loss than in 2019 (-4.9 per 1,000), which is equal to a balance of residence transfers to and from abroad of -14,528 units (Figure 7).

Outflows abroad determined negative rates in all areas of the country, slightly decreasing compared to 2019 in the South (-5.3 per 1,000) and the Islands (-6.1), increasing in the North-west and North-east (-5.9 and -6.1 respectively).

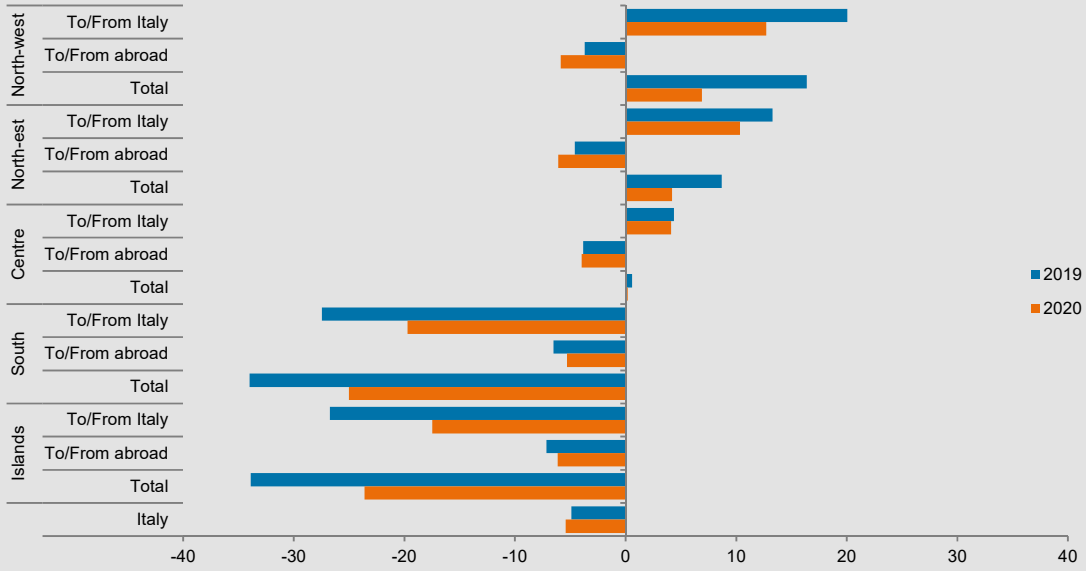
In the Centre-north, however, outflows abroad were fully compensated by internal migration, which, instead, accentuated the penalisation of the South and Islands. The South and

11 Compared to 2019, the following changes were recorded: - 10.2% for internal mobility, - 25.6% for immigration from abroad, - 10.9% for emigration. Expatriations of Italian citizens decreased by 0.9%. For more details see: https://www.istat.it/it/files//2022/02/REPORT_MIGRAZIONI_2020.pdf

12 The indicator is limited to young Italian with a tertiary degree of qualification because data on educational qualification of foreing migrants is not yet of adequate quality.

the Islands, in fact, retain the negative sign even in the total balance, which in 2020 was equal to -25.0 per 1,000 and -23.6 per 1,000 respectively. Conversely the overall balance was breakeven in the Centre and largely positive for the North, an area that acquired about 7,000 more young Italian graduates net of emigrants in 2020.

Figure 7. Net migration rate of Italian graduates (aged 25-39 years) **by origin/destination and geographic area. Years 2019 and 2020. Values per 1,000 residents with the same characteristics**



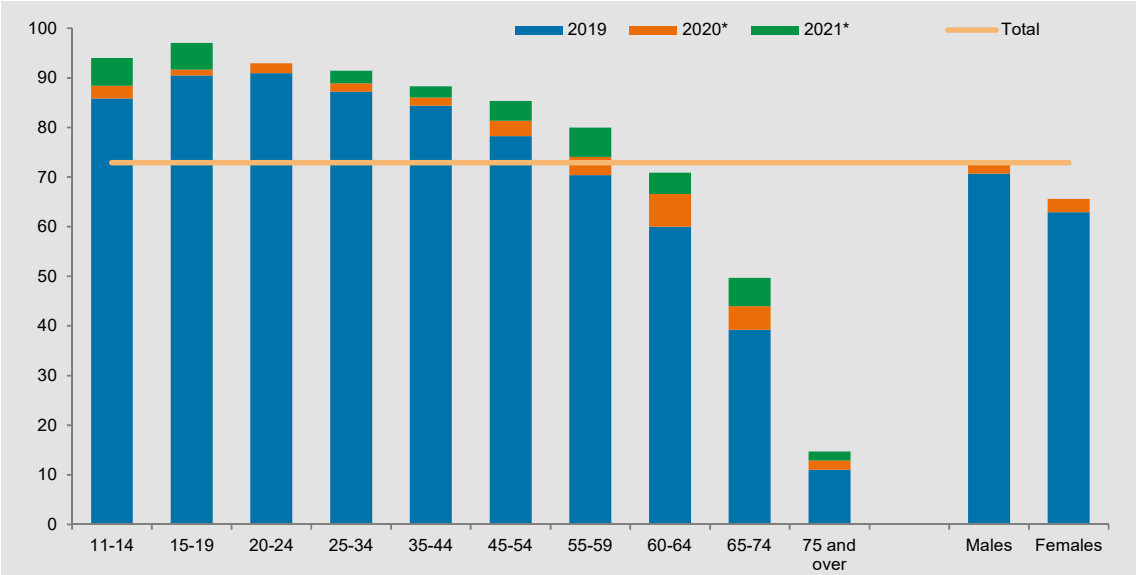
Source: Istat - Registrations and cancellations from the registry for residence transfer and Permanent census of population.

On the other hand, the South and Islands, lost 21,782 young graduates (net of returns) during 2020 only. Of these, more than three out of four have transferred their residence to the Centre-north (16,882; 77.5%).
The internal flows were all smaller than in 2019 but continued to confirm the different attractiveness of the Centre-north and the South and Islands for younger and more qualified human resources. The territorial gap also emerges in migration choices/opportunities: more than half of the young Italian graduates who moved abroad in 2020 came from Northern Italy, less than one in three from Southern Italy. Among those who returned to reside in Italy in the same year, less than one in four settled in the South and Islands and more than one in two in the North.

Women and the elderly were more connected during the two years of the pandemic, but the digital divide is still wide

The restrictions of the pandemic crisis have pushed towards more widespread and frequent Internet use. In 2021, the share of people aged 11 and over who used the Internet at least once a week in the three months prior to the interview rose to 72.9%; the overall growth compared to 2019 was more than 6 percentage points.
Also due to the continuation of distance learning, the indicator reached very high levels among school-age children: 94.0% in the 11-14 age group, 97.0% in the 15-19 age group; in 2019 it was 85.8% and 90.5% respectively (Figure 8).

Figure 8. People aged 11 and over who used the Internet at least once a week in the 3 months prior to the interview. Years 2019-2021. Percentages



Source: Istat, Survey on the use of ICT in the Households and by individuals
(*) difference on the previous year

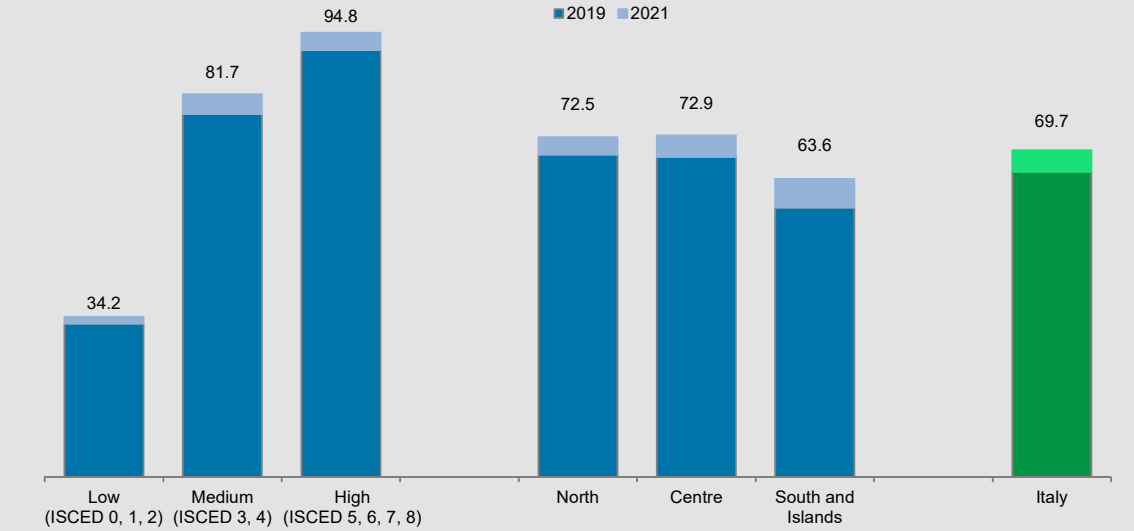
The values gradually decreased for the subsequent age groups. Among those aged 55-59, the share of Internet users was 80.0%; it dropped to just under 50% among those aged 65-74. However, it is precisely in these age groups that regular Internet use has grown the most, around 10 percentage points in the last two years.
Compared to 2019, therefore, the gap between young and the elderly in using the Internet has narrowed. However, people aged 75 and over (14.7%) still lag behind, despite the increase between 2019 and 2021 (+ 3.7 percentage points).
The interaction with ICT is significantly different between males and females. In 2021, 76.1% of men said they regularly used the Internet, compared with 69.8% of women. However, it should be noticed that it is among women of all age groups (with the exception of 11-14-year-olds) that the greatest growth occurred over the last two years. The gender gap has thus narrowed to zero for those aged between 20 and 54. However, among the elderly the disparities remain wide: from the age of 65 onwards, the female disadvantage is about 10 percentage points.
In the two years analysed, the territorial gaps also narrowed. The difference between the North-west and the South is 7.2 percentage points in 2021, it was 10.7 percentage points in 2019.

Great access barriers to internet use for families composed only of elderly and less educated people

The digital divide tends to add up to and exacerbate socio-cultural and economic inequalities. For example, the level of education is associated with differences in the availability and access to ICT technologies and equipment. Despite the increase in working from home, the continuation of distance learning, and the intensification of Internet use following the

restrictions during the COVID-19 epidemic, in 2021 three out of ten Italian households still do not have a PC and a home connection.
Behind this average value, there is a very wide gap (more than 58 percentage points) between households composed only of elderly people and those where there is at least one child (91.8%). The gap is equally wide between households where at least one member has a university qualification and those where the highest educational qualification is the lower secondary school diploma. Only 34.2% of the latter group, that are to a very large extent elderly-only families, have a PC and home connection compared to 94.8% of the former (Figure 9).

Figure 9. Households with Internet connection and at least one personal computer by highest educational qualification in the family, by geographic area. Year 2021. Percentages



Source: Istat, Survey on the use of ICT in the Households and by individuals

The most discriminating element is having a PC or similar device[13], because if one considers only the availability of an Internet connection at home, the gap between households with higher educated members (98.1%) and those with lower qualifications (52.8%) narrows, although it remains wide.
In the two years of the emergency, the level of the indicator grew, from an average value of 65.1% in 2019 to 69.7% in 2021, but the growth did not affect all households equally, and the differences by household type or level of education did not narrow.
Instead, the territorial gaps have narrowed. The gap between Northern and Southern Italy in 2021 is 8.9 percentage points; in 2019 it was 11.3 points.

13 The following technological devices are considered in the calculation of the indicator: desktop computer, laptop, notebook, tablet. Smartphones, PDAs with phone functions, e-book readers and game consoles are excluded.

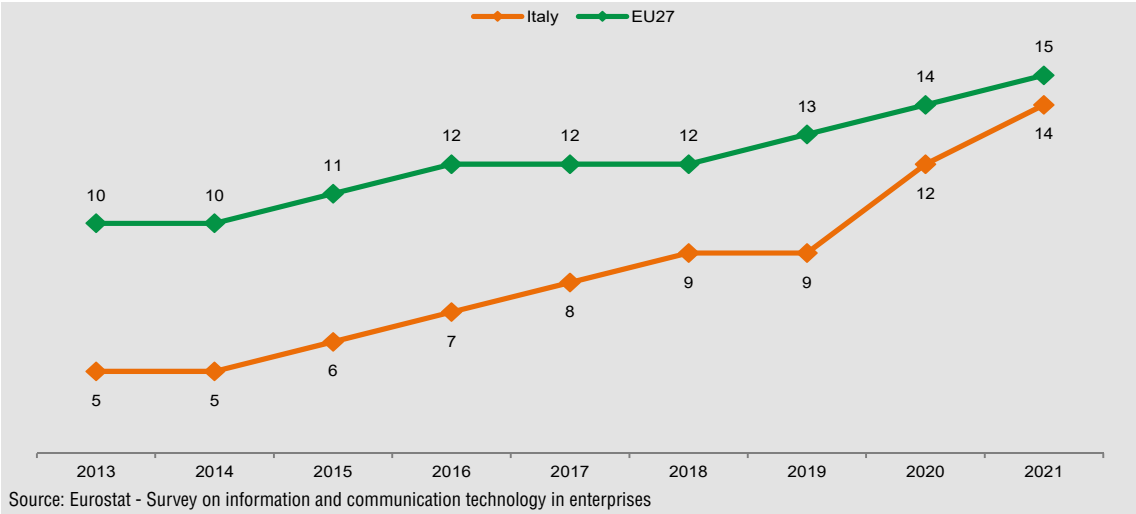
E-commerce continued to accelerate in the 2020 sales year. Still relatively few small and medium-sized enterprises involved

In 2021, the share of Italian enterprises with at least 10 employees that in the previous year made sales to end customers (B2C) through their own web channels, digital platforms or *e-commerce*[14] intermediaries reached 14%. This confirms the acceleration in the use of this sales channel recorded as early as 2019. In the first year of the COVID-19 crisis, Italy almost reduced its gap with the average of the 27 EU countries that is equal to 15% in 2021 (sales year 2020) (Figure 10).

As a response to the difficulties caused by the pandemic, 18.9% of Italian enterprises with at least 10 employees stated[15] that they had started or increased online sales during 2020. This strategy was mainly implemented by enterprises operating in the sectors that were most impacted by the closures and restrictions to contain the epidemic, such as the hospitality sector (41.8%), travel agencies and tour operators (39.3%), publishing (38.0%) and retail (36.0%), with varying results in terms of sales actually realised.

In contrast, the percentage of enterprises that actually sold via the web in 2020 grew especially in the restaurant industry, where it rose to 24.7% (it was 10.3% in the 2019 sales year), in the audiovisual industry (22.5%; +13 percentage points compared to 2019) and in the textile and clothing industries (15.0%; +8.7 percentage points).

Figure 10. Enterprises with 10 or more persons employed that during the previous year sold via web to end customers (B2C) in Italy and in the European Union. Years 2013-2021. Percentages



Source: Eurostat - Survey on information and communication technology in enterprises

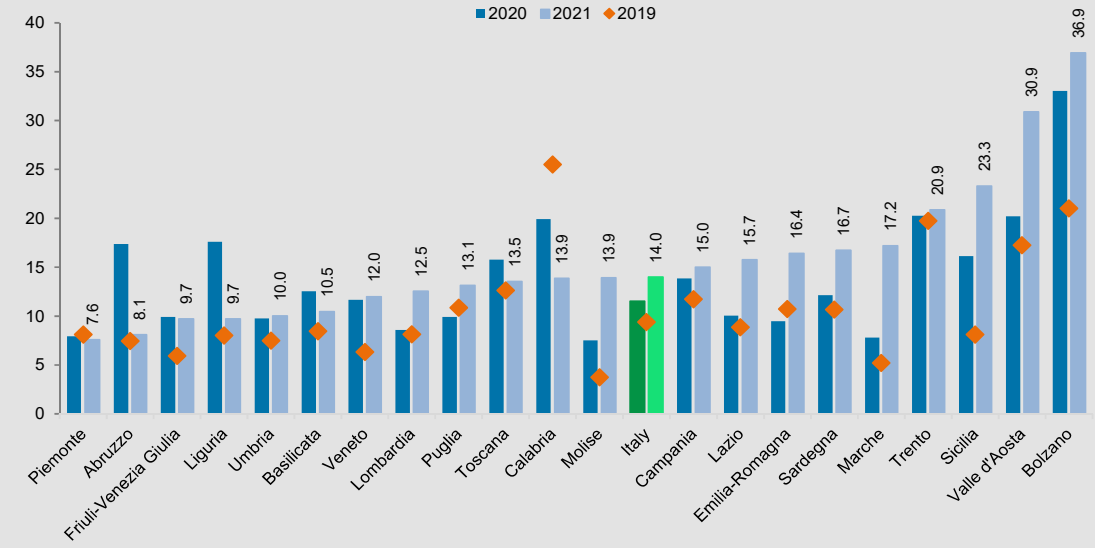
Growth was particularly significant among Italian large enterprises (24%; +4 percentage points). In 2021, these were 4 percentage points higher than the average for European companies of the same size (20%), which grew by just 1 percentage point over the same period. The propensity of small Italian enterprises to use the B2C web sales channel increased, but is still lower (13.8% in 2021; 11.3% in 2020).

14 The indicator does not consider sales made via the web to other enterprises or to the public administration, with the additional contribution of which it reached 16.2% in 2021 (it was 6.1% in 2013).

15 A section dedicated to the impacts of COVID-19 in the year 2020 was introduced in the Survey on ICT use in enterprises in the year 2021.

All Italian regions showed increases in the last year, with the only exception of Calabria, which lost 6 percentage points (Figure 11). Compared to the pre-pandemic data (referring to 2020), the largest increases were in Valle d'Aosta (+11 percentage points), Sicilia (+7), Marche (+9); generalised increases concerned the regions of the Centre. However, territorial differences remain wide, from 7.6% of enterprises in Piemonte (more characterised by *business-to-business* exchanges) to 36.9% of those in the autonomous province of Bolzano.

Figure 11. Enterprises with 10 or more persons employed that during the previous year sold via web to end customers (B2C) by region.Years 2019-2021. Percentages



Source: Eurostat - Survey on information and communication technology in enterprises

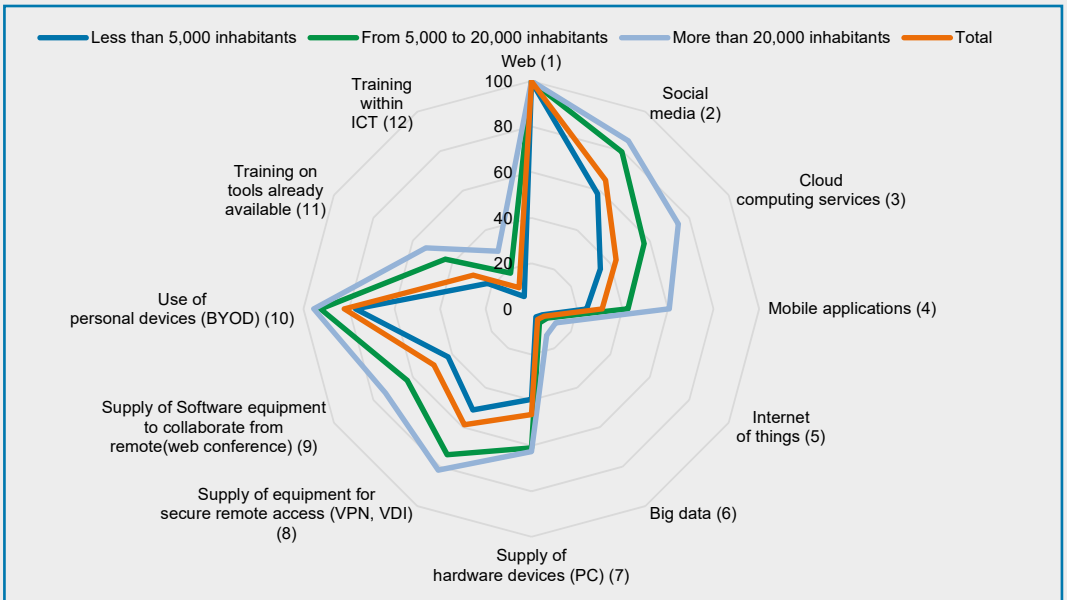
THE TECHNOLOGICAL EVOLUTION OF MUNICIPAL ADMINISTRATIONS BETWEEN 2017 AND 2020

The diffusion of ICT technology has long been the focus of public administration modernisation policies, but in Municipalities - especially the smallest ones - it has remained rather limited. According to estimates by the Sample survey on the use of ICT in public administrations, in 2018 only 25% of Italian Municipalities managed entirely online at least one service for households. Among Municipalities with up to 5 thousand inhabitants, the percentage dropped to 16.5%.

In 2020, the COVID-19 emergency, with the widespread of working from home, impacted on the digital transformation processes of services, procedures and work organisation that were already underway, leading to different effects depending on the characteristics of the administrations. The results of the two latest multi-purpose surveys of the Permanent Census of Public Institutions[1] make it possible to assess the technological evolution of a panel of Municipalities[2] compared to the pre-pandemic picture.

The 12 digitalisation indicators considered (Figure A), relating to technologies for data management and service delivery (indicators 1-6), technological endowments necessary to perform work remotely (7-10), and training (11-12), describe different profiles depending on the technologies and measures adopted and highlights wide gaps between the levels of technological endowment of the largest and smallest Municipalities.

Figure A. Digital profile of municipalities by demographic dimension. Year 2020 (a)**. Percentages**



Source: Istat, Permanent census of public institutions
(a) Provisional data

1 The preliminary results of the third edition of the multi-purpose survey of the Permanent Census of Public Institutions were presented on 15 December 2021 with the virtual event "Health Emergency and Resilience of Public Institutions" (https://www.istat.it/it/archivio/264396). In order to prioritise the timeliness of the dissemination of information on agile working and digitalisation, the data have been disseminated on a provisional basis, without subjecting them to the full process of checking and correction, including the estimation of partial and total non-response, which will be carried out before the final data are disseminated, scheduled for late 2022 and early 2023.

2 The panel consists of 7,370 Municipalities responding to both editions of the census survey (69% belong to the class of small Municipalities with less than 5,000 inhabitants, 24% have between 5,000 and 20,000 inhabitants, 7% have more than 20,000 inhabitants).

Among the technologies for data and online services management, the web is the most widespread by far, and in 2020 it concerned almost all Municipalities; compared to 2017, its availability increased by 12.4 percentage points on average and by 15 points in small Municipalities, which have now almost completely closed the gap from the medium-sized and large Municipalities. The use of social media in communication between administrations and citizens or businesses has also grown significantly, reaching 65.2% in 2020 (+22.6 percentage points); it remains far more widespread in the largest Municipalities (85.2%) despite the progress of the smallest Municipalities (58.3% in 2020; +25.1 points). In correspondence with more advanced digitalisation tools and strategies, the percentages tend to decrease and the gap between large and small municipalities increases. Driven by smartworking and working from home the use of cloud services reached 42.9% of Municipalities in 2020 (+14.4 percentage points); it rises to 74.5% among those with more than 20 thousand inhabitants and falls to 35% among the smallest ones. There is also a wide gap in the use of mobile applications, which involves just under one in four small Municipalities and grows to six in ten for Municipalities with 20,000 inhabitants or more. Between 2017 and 2020, the deployment of these technologies grew more in medium-sized and large Municipalities.

Small Municipalities experienced greater difficulty in acquiring the technology needed to support remote working, which is necessary to guarantee the continuity of institutional activities even in periods of greater restrictions, and recorded less investment in the development of staff IT competencies, in a general framework of low levels of training for all types of Municipalities.

Despite the gaps highlighted, the pandemic crisis marked a considerable acceleration in the digitalisation of small Municipalities, and in particular, in the diffusion of the most enabling technologies of online service management - web, mobile applications and cloud computing services - creating the fundamental requirements for increasing the offer of digital services.

An integrated reading of the data from the survey on ICT use in public administrations with the results of the Censuses [3]shows, remarkable advances in the availability of enabling technologies made by those small Municipalities that before the pandemic did not reach the minimum level of offering online services[4]: between 2017 and 2020, the weight of those with neither web, cloud or mobile technology reduced (-12 percentage points compared to 2017), and the share of those using two or three grew more than proportionally (+13 points overall - Figure B).

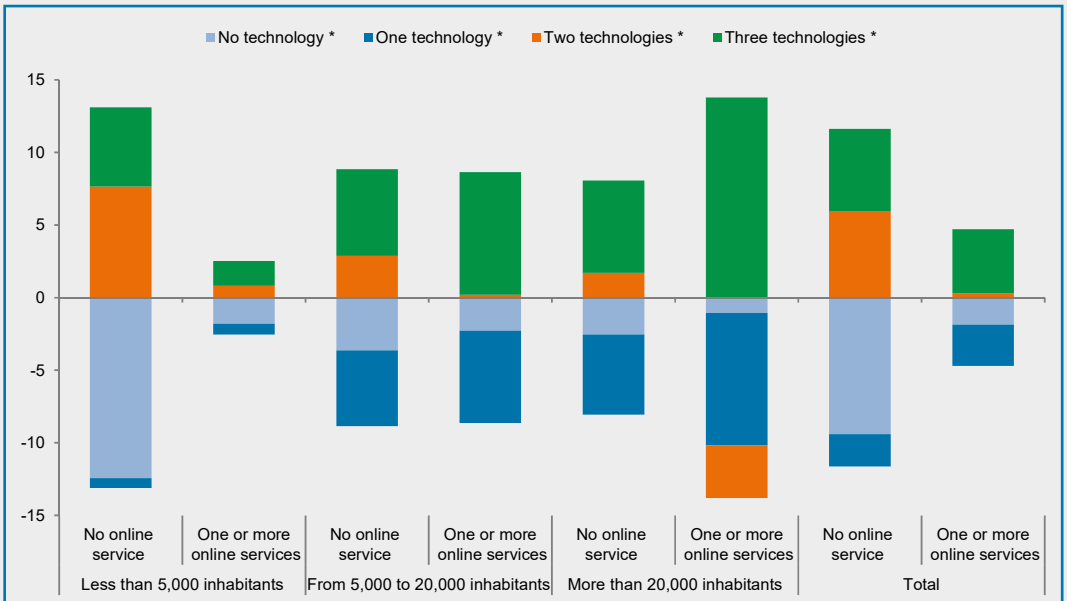
In 2020, the data show a broader endowment of enabling technologies for all Municipalities. Larger municipalities, which were already better equipped before the pandemic crisis and were on a more advanced level of online service management, proved to be more resilient and adaptive to the COVID-19 crisis. In the emergency phase, driven by the increasing demand for remote services and the wider use of working from home, they moved mainly to the joint adoption of all three technologies considered. This growth was very high for the group of Municipalities with at least 20,000 inhabitants and with online services (+14 percentage points), but it was appreciable in all the other groups of medium-large Municipalities.

Even the smallest Municipalities, which before the pandemic were less technologically equipped, and further behind in the provision of online services, increased the availability of enabling technologies, but stopping at two in many cases. Although the use of cloud computing services in small Municipalities increased compared to 2017, in 2020 two out of three small Municipalities still do not have this critical tool to integrate the information and data so to be able to deliver and manage remote or online services.

3 The panel obtained by integrating the micro-data from the two sources consists of a subset of 5,755 Municipalities which, in terms of size, are similarly distributed to the original panel.

4 The indicator of ICT diffusion in local administrations included in the Bes *framework* is defined as "the percentage of Municipalities that provide online at least one service to family or individuals at a level that allows the entire process (including any online payment) to be initiated and concluded electronically".

Figure B. Municipalities by number of enabling technologies adopted, demographic dymension and number of online services provided to households (a). Years 2017 and 2020. Differences in percentage points on 2017



Source: Istat, Permanent Census of public institutions and Survey on information and communication technology in public administrations
(a) Year 2018.
(*) Web, mobile, cloud.

Indicators

1. **R&D intensity:** Percentage of expenditure for intramural research and development activities performed by business enterprise, government, higher education (public and private) and non-profit sector on GDP. Expenditure and GDP are considered in current prices, million euro.
   Source: Istat - R&D survey in companies; R&D survey in non-profit organizations; Survey on R&D in public bodies
2. **Patent propensity:** Number of patent applications filed to the European Patent Office (EPO) per million of inhabitants.
   Source: OCSE, Database Regpat
3. **Impact of knowledge workers on employment:** Percentage of employees with tertiary education (ISCED 6-7-8) in scientific-technological occupations (ISCO 2-3) on total employees.
   Source: Istat - Labour force survey
4. **Innovation rate of the national productive system:** Percentage of firms that have introduced technological (product or process), organizational or marketing innovation in a three-year period on total number of firms with at least 10 persons employed.
   Source: Istat, Cis (Community Innovation Survey)
5. **Intellectual property products (as part of gross fixed capital formation):** The value of expenditure on research and development, mineral exploration and evaluation, computer software and database, entertaiment literary or artistic originals and other intellectual property procucts intended to be used for more than one year. Chained values with reference year 2015 (millions of euro), Indexed 2015 = 100.
   Source: Istat - National Accounts
6. **Cultural employment (% of total employment):** Percentage of employees in cultural and creative professions or sectors of activity (ISCO-08, Nace rev.2) out of the total number of employees (15 years and over).
   Source: Istat - Labour force survey
7. **Brain circulation (italians, 25-39 years old):** Net migration rate of holders of a tertiary degree: (immigrants-emigrants) / total resident population * 1,000. Both numerator and denominator refer to Italian holders of a tertiary degree, 25-39 years old.
   Source: Istat - Registrations and cancellations from the registry for residence transfer and Permanent census of population
8. **Regular internet users:** Percentage of individuals aged 11 and over who used the internet at least once a week in the 3 months prior to the interview.
   Source: Istat - Survey on the use of ICT in the Households and by individuals
9. **Availability of at least one computer and Internet connection in the household:** Percentage of households with internet connection and at least one personal computer (including desktop computers, laptops, notebooks, tablets; excluding smartphones, PDAs with phone functions, e-book readers and game consoles).
   Source: Istat - Survey on the use of ICT in the Households and by individuals
10. **Municipalities with online services for families:** Percentage of Municipalities that provide on line at least one service for families or individuals at a level that allows the electronic start and conclusion of the entire process (including any on line payment).
    Source: Istat - Survey on information and communication technology in public administrations
11. **Enterprises with at least 10 persons employed with web sales to end customers:** Percentage of enterprises with 10 or more persons employed that during the previous year sold via web to end customers (B2C). From the survey year 2021 economic activities from division 10 to 82 are included according to Ateco 2007 nomenclature (excluding section K - Financial and insurance activities). From the same survey year, estimates refer to the unit of analysis “enterprise”, i.e. a statistical unit that may consist of one or more legal units.
    Source: Istat - Survey on information and communication technology in enterprises
12. **Employed persons with basic or above basic overall digital skills (20-64 years):** Percentage of employed people (aged 20-64) who have at least basic digital competences in all the four specific areas (information, communication, problem solving, software competences) identified by the “digital competence framework”. For each area, a number of activities related to the use of the Internet or software (from 4 to 7) were selected and, depending on the number of activities carried out, a rating is attributed to the area, ranging from 0= no competence, 1= basic level, 2= above basic level.
    Source: Istat - Survey on the use of ICT in the Households and by individuals

Indicators by region and geographic area

REGIONS GEOGRAPHIC AREAS	R&D intensity (a)(*)	Patent propensity (b)	Impact of knowledge workers on employment (c)	Innovation rate of the national productive system (d)	Intellectual property products (e)	Cultural employment (c)
	2019	2018	2021	2018	2020	2021
Piemonte	2.27	107.2	16.5	54.8	....	3.5
Valle d'Aosta/Vallée d'Aoste	0.48	32.5	14.9	41.8	....	2.9
Liguria	1.48	74.6	18.8	47.7	....	2.7
Lombardia	1.33	135.8	18.1	60.5	....	4.0
Trentino-Alto Adige/Südtirol	1.10	88.0	15.3	54.1	....	3.7
Bolzano/Bozen	*0.74*	*102.9*	*13.0*	*51.4*	....	*3.1*
Trento	*1.54*	*73.3*	*17.8*	*57.8*	....	*4.3*
Veneto	1.38	137.6	16.7	62.4	....	3.9
Friuli-Venezia Giulia	1.69	116.6	16.1	56.0	....	3.3
Emilia-Romagna	2.08	191.4	18.9	61.4	....	3.0
Toscana	1.60	81.4	17.3	56.9	....	4.2
Umbria	1.03	34.1	16.6	48.7	....	3.5
Marche	1.08	63.4	17.3	45.1	....	3.5
Lazio	1.85	40.2	23.4	51.1	....	4.7
Abruzzo	1.07	37.3	18.4	56.0	....	2.5
Molise	1.18	25.6	18.7	42.7	....	2.2
Campania	1.29	18.3	18.9	47.1	....	2.6
Puglia	0.82	16.6	17.0	49.1	....	1.8
Basilicata	0.65	6.0	16.4	48.9	....	2.9
Calabria	0.57	9.0	18.2	45.6	....	1.6
Sicilia	0.84	9.7	17.3	47.6	....	2.5
Sardegna	0.85	14.7	17.7	44.2	....	2.3
North	1.59	133.9	17.6	59.4	....	3.6
North-west	1.55	121.3	17.7	58.4	....	3.8
North-east	1.65	151.4	17.3	60.7	....	3.5
Centre	1.64	55.5	20.1	52.2	....	4.3
South and Islands	0.96	15.7	17.9	48.1	....	2.3
South	1.01	11.0	18.1	48.6	....	2.2
Islands	0.84	18.0	17.4	46.7	....	2.5
Italy	1.46	78.4	18.2	55.7	107.5	3.4

(a) Percentage of R&D expenditure on GDP;
(b)Per million of inhabitants;
(c) Per 100 in employment;
(d) Per 100 enterprises with at least 10 employees;
(e) Chain-linked values with reference year 2015 (million Euro), index-linked 2015=100;
(f) Per 1,000 inhabitants aged 25-39 with tertiary education (bachelor's degrees, AFAM, PhD);

Brain circulation (italians, 25-39 years old) (f)	Regular internet users (g)	Availability of at least one computer and Internet connection in the household (h)	Municipalities with online services for families (i)	Enterprises with web sales to end customers (c)	Employed persons with basic or above basic overall digital skills (20-64 years) (l)
2020	2021	2021	2018	2021	2019
0.8	72.8	70.2	15.0	7.6	54.4
-11.0	75.6	67.2	21.6	30.9	58.1
-3.9	75.6	71.2	13.2	9.7	56.0
10.5	76.7	73.4	41.3	12.5	58.5
0.2	77.3	74.4	17.1	30.3	57.4
-4.9	*77.3*	*74.0*	*22.5*	*36.9*	*56.5*
3.7	*77.4*	*74.7*	*13.6*	*20.9*	*58.3*
-3.4	74.3	73.1	43.4	12.0	53.6
-0.8	73.7	70.5	20.0	9.7	58.3
14.4	74.6	73.0	45.6	16.4	56.0
1.4	75.3	72.7	39.1	13.5	55.3
-11.4	74.6	70.1	28.3	10.0	52.1
-9.8	72.1	67.7	17.5	17.2	50.5
3.6	76.7	74.8	20.9	15.7	53.0
-15.6	70.9	68.1	12.5	8.1	50.6
-31.4	65.0	63.2	5.9	13.9	51.3
-22.6	70.4	66.0	18.5	15.0	45.1
-24.7	65.8	61.7	25.2	13.1	44.7
-40.5	68.8	61.4	15.3	10.5	44.4
-33.4	66.8	59.3	8.7	13.9	44.8
-25.4	65.3	60.9	12.3	23.3	44.5
-17.6	74.4	70.3	21.8	16.7	50.3
5.8	75.2	72.5	30.4	13.2	56.4
6.9	75.6	72.2	28.2	11.4	....
4.2	74.6	72.9	34.9	15.4	....
0.2	75.5	72.9	25.9	14.7	53.3
-24.6	68.2	63.6	15.6	15.5	45.8
-25.0	68.4	63.7	15.0	13.3	....
-23.6	67.6	63.4	16.9	21.4	....
-5.4	**72.9**	**69.7**	**25.1**	**14.0**	**52.9**

(g) Per 100 persons aged 11 and over;
(h) Per 100 households;
(i) Per 100 Municipalities;
(l) Per 100 employed aged 20-64 years.
(*) For 2020 year only the Italian figure, equal to 1,53, is available as a provisional estimate.

12. Quality of services[1]

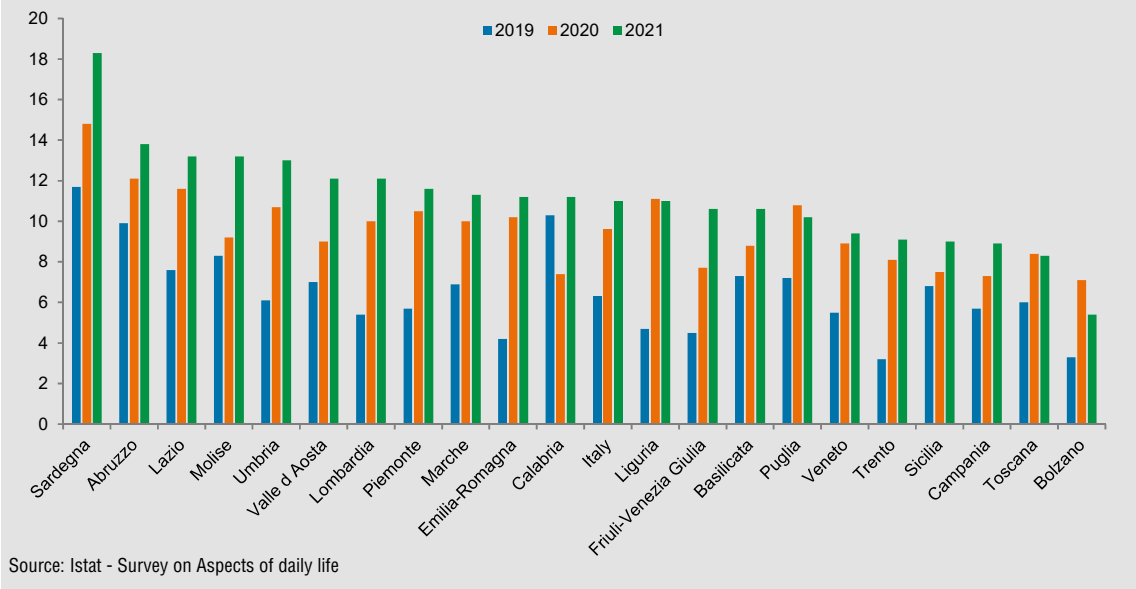
The quality of services domain analyses very heterogeneous phenomena, from health and social welfare services to mobility and public utilities. The picture that emerges is particularly articulated. The dynamics induced by the pandemic over the two years have had a strong impact on the indicators of effectiveness and accessibility for various services, partly because travel restrictions and the fear of infection have changed the behaviour of the population.
The situation of health services is of particular relevance. There is an increase in the percentage of people who report unmet needs for medical care and a decrease in hospital admissions in other regions. In terms of structural resources, in order to cope with the emergency, a slight increase in medical and paramedical staff was observed. Furthermore, increasing use of home care, particularly for the elderly, has been observed in the health sector, to limit the spread of the pandemic, as also witnessed by the increase in patients treated in Integrated Home assistance service.
On the other hand, the use of mobility services has declined sharply, and frequent users of public transport have decreased by as much as 6 percentage points compared to pre-*COVID* years. The accessibility of public utilities (post office, municipal offices, police, Carabinieri) appears less critical than in the pre-*COVID* period, but it is likely that the pandemic situation has conditioned the use of these services, also due to the expansion of online services.

In the second year of the pandemic, unmet need for medical examination continued to rise

In 2021, 11.0% of people who needed specialist examinations (excluding dental examinations) or diagnostic tests said they had to give them up due to financial problems or difficulties in accessing the service. In 2021, the share of people who had to give up medical appointments or examinations increased by 1.5 percentage points, 765,000 more people, confirming the increase already observed in 2020, equal to +3.3 percentage points compared to 2019. The share of those who report having had to cancel for reasons related to COVID-19 increased from 51.4% in 2020 to 53.3% in 2021 (a value that rose to 60.1% in the North-east). These unmet needs and their increase are a cause for concern, as they imply a postponement of services, which could, on the one hand, lead to a future increase in demand, with an impact on waiting lists, and, on the other hand, cause increases in avoidable mortality due to lack of timely treatment.
Up until 2019, the unmet need of healthcare services showed a territorial gradient between Northern and Southern Italy, to the disadvantage of the latter, whereas in the last two years, the pandemic situation has made the problem more homogeneous across the territory. At the regional level, however, the situation remains critical in Sardegna,, where the percentage of people who had to cancel medical appointments or examinations in 2021 was 18.3%, with an increase of 6.6 percentage points compared to 2019; in Abruzzo, the share was estimated at 13.8%; in Molise and Lazio the share was 13.2%, with an increase of about 5 percentage points compared to two years earlier (Figure 1).

1 This chapter was edited by Manuela Michelini, with contributions from: Alessandra Burgio, Alessia D'Errico, Lidia Gargiulo, Valentina Joffre, Alessandro Solipaca.

Figure 1. People which had given up medical examination in the last 12 months by regions. Years 2019-2021. Percentages



Source: Istat - Survey on Aspects of daily life

Living in a metropolitan area is another condition that determines greater increases in unmet need for medical services, in fact, in the years of the pandemic the percentage rose to 12.8% in these areas (it was 7.3% in 2019).

The elderlies experienced the greatest problems in accessing healthcare services: the percentage of those who said they had to give up at least one healthcare service they needed ranged from 14.6% among people aged 55-59 to 17.8% in the 74+ age group, while it was lower among the younger age group (7.9% in the 25-34 age group).

Level of education is a discriminating variable in the use of medical examinations, since the better educated are generally more careful about controlling their health, and consequently unmet need for medical services is also conditioned by levels of education, but the pandemic situation has put everyone in the position of having to give them up.

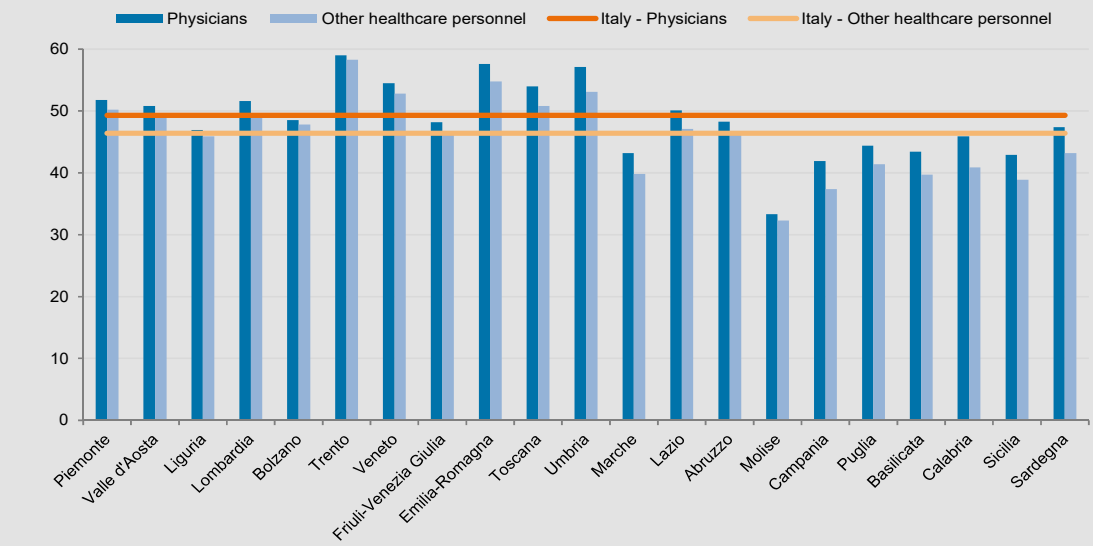
Slight increase in physicians and nurses, confidence in healthcare personnel

In Italy, there were 4.1 physicians per 1,000 residents in 2021, a slight increase for the first time since 2015 (4 per 1,000 residents). The nationwide increase is linked to the pandemic situation, which has led to the need to expand the number of medical personnel to cope with the health emergency. There was also a slight increase for nursing staff in 2020, the rate of nurses and midwives being 6.6 per 1,000 inhabitants (it was 6.5 per 1,000 in 2019). The data transmitted by the Regions and Autonomous Provinces to the Ministry of Health referring to the period from March 2020 to April 2021, confirm that 83,180 operators were recruited to cope with the pandemic situation, including 21,414 physicians and 31,990 nurses.

At the regional level, the availability of physicians was higher than the national average in Liguria (4.7 physicians per 1,000 inhabitants), Emilia-Romagna (4.4), Toscana (4.5) and Umbria (4.6), Lazio (4.8), Sicilia (4.5) and Sardegna (4.9), while minimum values were recorded in Basilicata (3.4), in the Autonomous Provinces of Bolzano and Trento (3.4 and 3.3) and in Veneto (3.6). Even for nurses, the situation was regionally diversified, with more

than 8 nurses per 1,000 inhabitants in Liguria, in the autonomous provinces of Trento and Bolzano and in Molise, while there were minimum values in Lombardia, Campania and Calabria. In the last two years, physicians and nurses have been the focus of public attention, also thanks to the commitment shown during the pandemic. For the first time in 2021, the Aspects of Daily Life survey included two questions on trust that people have in physicians and other healthcare personnel, which showed that Italians' level of trust in these figures is, on average, high: in 2021, the average mark was 7.3 for physicians and 7.2 for healthcare personnel, values similar to those expressed for the police and fire brigade.
Around 50% of the population gave a trust rating of 8 or higher to both healthcare personnel and physicians, although trust in physicians was slightly higher (Figure 2). The regions with higher levels of trust were the autonomous province of Trento, Veneto, Emilia Romagna, Toscana and Umbria, where more than 50% of people gave a score of 8 or higher to both physicians and other healthcare personnel.

Figure 2. People aged 14 and over who gave a high score (8-10) to trust in the physicians and other healthcare personnel by regions. Year 2021. Percentages

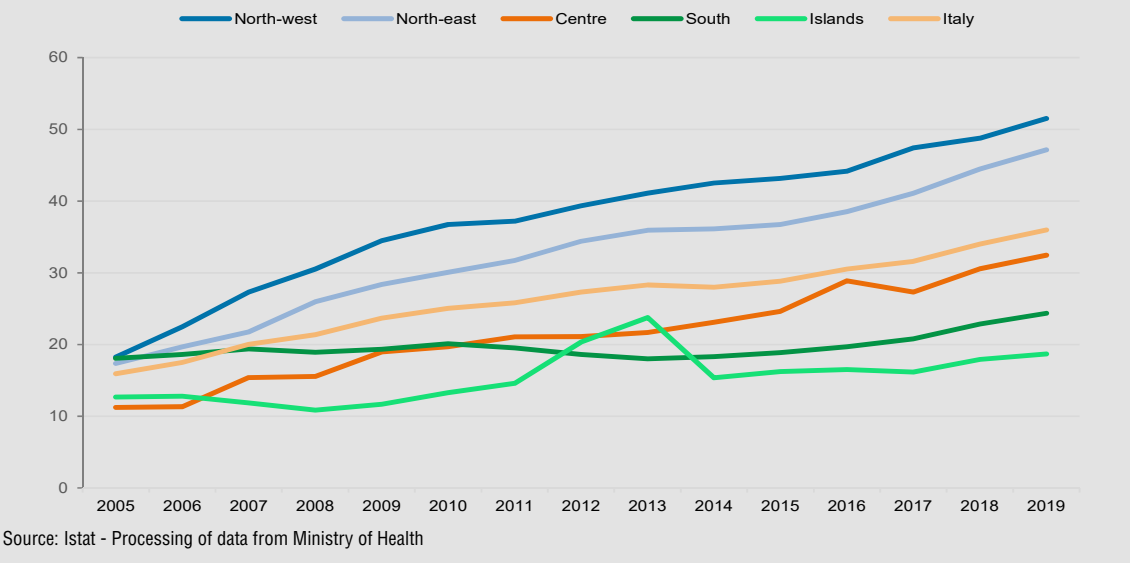


Source: Istat - Survey on Aspects of daily life

In the North-west more than 50% of general practitioners exceeded the threshold of 1,500 patients

The percentage of general practitioners (GPs) with more than 1,500 patients is available for 2019, providing important information on the conditions of the medical workforce before the pandemic. In 2019the share of GPs exceeding the maximum threshold wasthe share of GPs exceeding the maximum threshold was 36.0%, 2 percentage points higher than the previous year over the last 15 years, resulting in a burden on GPs in primary care (Figure 3). There are still very wide differences over the Country with a higher percentage of physicians with a number of patients above the threshold in the North (51.5% in the North-west and 47.1% in the North-east), in the Centre (32.5%) and lower in the South (24.4%) and in the Islands (18.7%). The situation continued to be particularly critical for residents in Lombardia and the Autonomous Province of Bolzano, where the percentage of GPs exceeding the threshold value was over 60%.

Figure 3. General practitioners with a number of patients above the maximum threshold by geographic area. Years 2005-2019. Percentages



Source: Istat - Processing of data from Ministry of Health

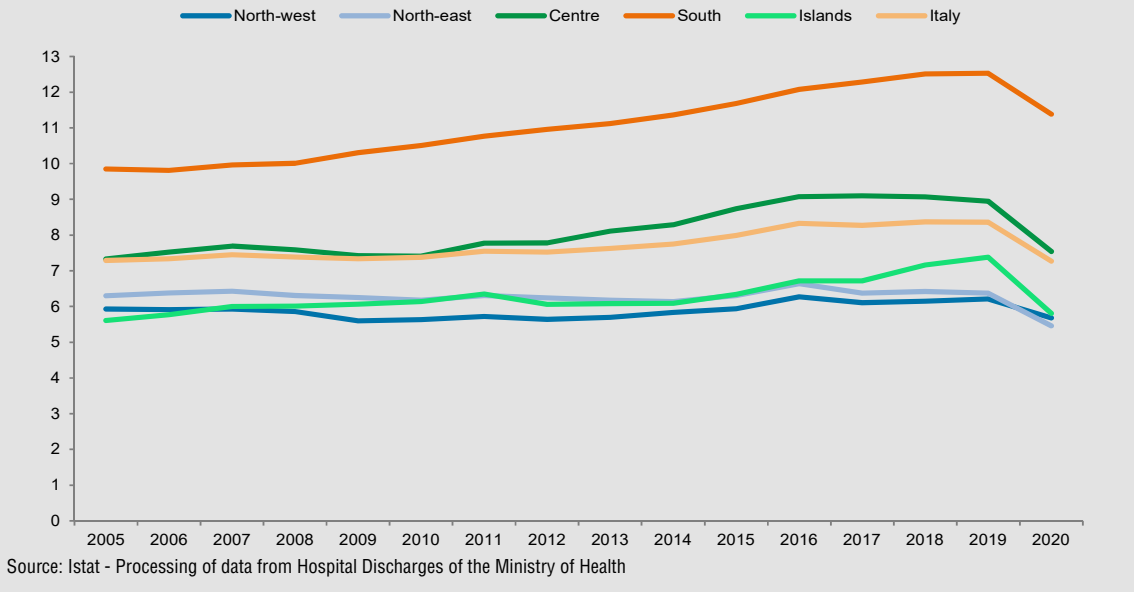
In 2020, fewer people moved to another region for hospitalisation

In Italy, hospital emigration, measured as the percentage ratio between hospital discharges carried out in regions other than that of residence and the total number of discharges of residents in the region, and referring to hospital admissions in ordinary regimes for "acute" care[2], has been around 8% in recent years. In 2020, however, there was a decline that brought the phenomenon back to 2005 levels (7.3%). This drop was undoubtedly linked to the pandemic situation, which, on the one hand, imposed restrictions that prevented people from travelling outside their region/municipality and, on the other, had a strong impact on hospital services, with an overall reduction of 1.7 million admissions compared to 2019. This reduction affected the entire Country but was more substantial in the Islands where there was a 27% drop.
Hospital emigration was very different over the territory: in the North and the Islands it was 5.6% and 5.8% respectively, in the Centre, it was 7.5% and in the South it was 11.4% (Figure 4). The percentage of hospital emigration was particularly high in Calabria (18.7%) and Abruzzo (14.5%) and in small regions where recourse to hospitalisation across the region is more frequent (Molise, Basilicata).
Over the last few years, the hospital supply had been changing, with a reduction in facilities and beds, which certainly contributed to the exacerbation of the pressure on the healthcare system caused by the COVID-19 pandemic. In 2019, hospital beds in high-care wards[3] were 3.01 per 10,000 inhabitants, down from 3.51 in 2010.
The supply of high-care beds varied across the territory, with 3.22 beds per 10,000 inhabitants in the North, 2.8 in the Centre and in the South and Islands with the greatest shortages in Umbria and Trentino-Alto Adige/Südtirol (2.28), Sardegna (2.33), Campania (2.39) and Calabria (2.43).

2 Admissions to "spinal unit", "functional recovery and rehabilitation", "neuro-rehabilitation" and "long-term care" wards were excluded.

3 Paediatric cardiac surgery, cardiac surgery, tropical infectious diseases, spinal unit, neurosurgery, psychiatry, nephrology, haemodialysis, neonatology, paediatric neurosurgery, pain therapy.

Figure 4. Hospital patient emigration to a different region, by geographic area. Years 2005- 2020. Percentages



Source: Istat - Processing of data from Hospital Discharges of the Ministry of Health

Integrated Home Assistance: slight but steady growth

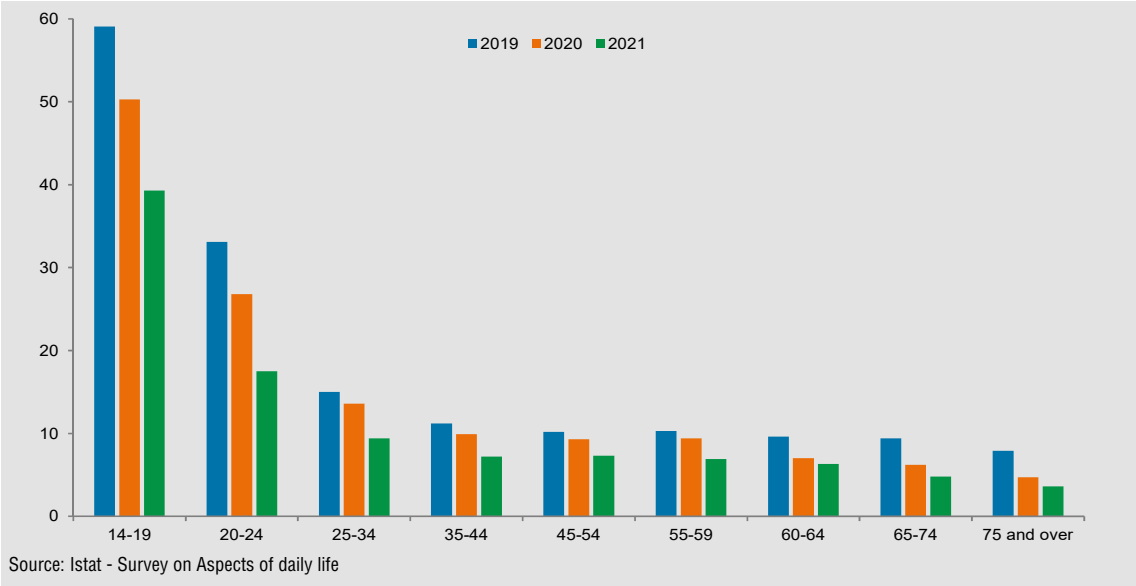
Integrated Home Assistance (IHA) consists of a set of medical, nursing and rehabilitative treatments integrated with social welfare services (personal hygiene, personal care, meal assistance) for the non-self-sufficient elderly in their own homes. The spread of these services responds to the need to care for frail persons at home, improving their quality of life and, at the same time, easing the burden on other health services.
In 2020, there were about 390,000 elderly persons aged 65 and over using this service, 2.8% of them, with a slight but steady growth over previous years. As age increases, the use of this service grows: it was 1% among those aged 65-74 and increased to 4.6% among those aged 75 and over. The service was not uniform throughout Italy: considering the most fragile segment of the population, in Veneto, Emilia Romagna, Abruzzo, Basilicata and Sicilia more than 6% of persons aged 75 years and over made use of IHA, while the service was scarce in Valle d'Aosta and in the autonomous province of Bolzano, where the percentage of persons assisted did not reach 1% of the elderly.
The pandemic situation may have favoured the expansion of home care to compensate for the difficulties in accessing hospitals. In some regions, the increase was substantial, particularly in Lazio (+0.8 percentage points), Toscana and Calabria (+0.6 percentage points) and Abruzzo (+0.5 percentage points).

Frequent use of public transport still declining

The share of people aged 14 and over who frequently used mobility services fell from 12.5% in 2020 to 9.4% in 2021, losing more than 6 percentage points compared to pre-pandemic years (it was in fact 15.1% in 2019). The contraction affected the whole of the Country but was particularly evident in the regions where the service has traditionally been most popular: in the North-west, where it fell from 18.4% in 2019 to 11.6% in 2021, and in the

Centre, where it fell from 17.6% to 11.3%, while in the Islands, the low share of frequent users (6.4% of people aged 14 and over) fell by only one percentage point. The highest use was in Liguria (18.6%) and the autonomous province of Bolzano (18.2%), while the lowest was in Umbria (5.2%), Puglia (5.3%) and Marche (5.5%).
The highest concentration of demand for public mobility was confirmed among the youngest, just under 40% of frequent users being under 20 years old and 17.5% between 20 and 24 years old. Again, in this case, it was precisely in the age group where the use of the service was greatest that the strongest reduction was recorded: compared to 2020 - 11.0 percentage points among 14-19-year-olds and -9.3 among the 20-24 -year-olds; above all, this drop was added to that already recorded in 2020 compared to the years preceding the pandemic crisis (respectively - 8.8 in the 14-19 age group and -6.3 in the 20-24 age group) (Figure 5).

Figure 5. Frequent users of public transport by age group. Years 2019-2021. Percentages



Source: Istat - Survey on Aspects of daily life

On the other hand, the gender differences are less marked, partly due to a more pronounced reduction in the use of the service by women than by men (9.8% vs. 8.9%).
Despite the reduction in the use of mobility services among frequent users, the proportion of those declaring themselves satisfied with the service remained stable.
Even in 2021, one in five users declared themselves satisfied with mobility services. The most satisfied are the residents of the northern regions, in particular the autonomous province of Bolzano (57.8%), while Campania and Lazio are still the regions with the lowest share of users who rate the service positively, just over 10% (10.1% and 11.1% respectively), despite the fact that the trend of improvement in recent years is concentrated mainly in the South and Islands and in the Centre.

Local Public Transport worsened in Southern Italy, slight growth in seat-km of public transport network offered in the North

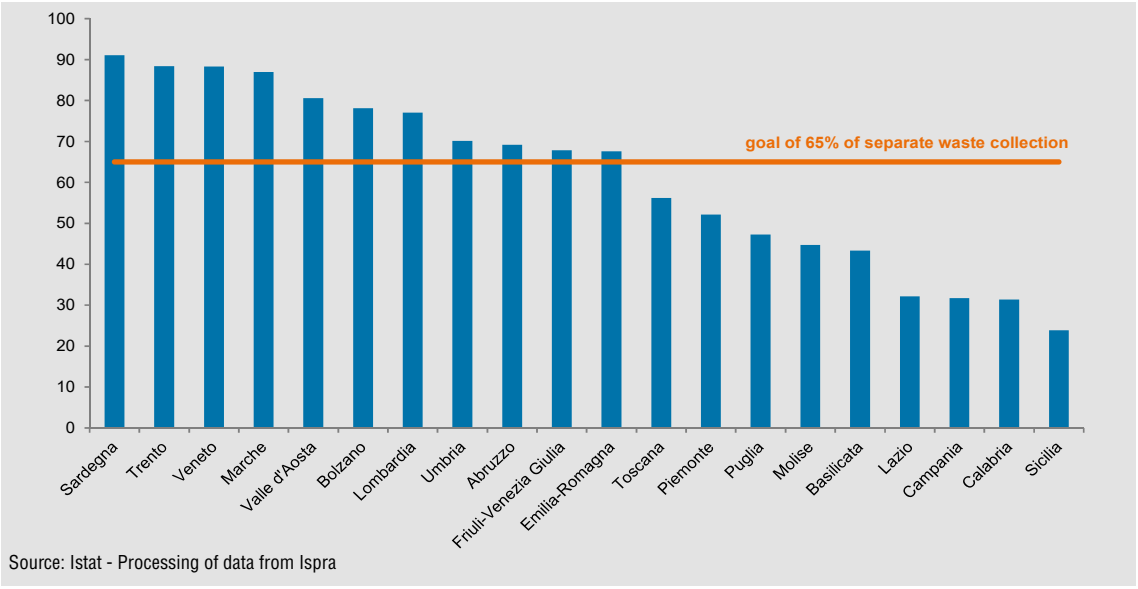
Local public transport (LPT) services in provincial capitals in 2019 covered, on average, 4,624 seat-km per inhabitant, with a strong differentiation across the territory between

cities in the North and the Centre, which have a greater supply of seats (6,199 and 5,004 seat-km, respectively), and those in the South and Islands (1,946 seat-km).
The supply of local public transport has been declining steadily over the past five years on a national level. In the last year, a slight increase in supply was observed in the capitals of the North, while it remained substantially stable in the Centre and continued to deteriorate in the South and Islands. Commuter transport was still characterised predominantly by road-based services; the share of low-emission buses in 2020 was only 30.8%, with a particularly critical situation in metropolitan capitals, where it was only 22.6%.

Separate waste collection increasing, 10 regions over 65% target

In 2020, the percentage of separate waste collection stood at 63% of national production, +1.8 points compared to 2019. Organic waste accounts for most of the sorted waste (39.3%), followed by paper and cardboard accounting for 19.2%, glass 12.2% and plastic 8.6%.
In particular, 56.7% of population live in a municipality that has achieved the 65% separate collection target. The most virtuous regions are Sardegna, the autonomous provinces of Bolzano and Trento, Veneto, Marche, Valle d'Aosta, Lombardia, Umbria, Abruzzo, Friuli-Venezia Giulia and Emilia-Romagna (Figure 6). Homogeneous improvements have been record-

Figure 6. Resident population in municipalities with separate waste collection greater than or equal to 65% by region, Year 2020. Percentages



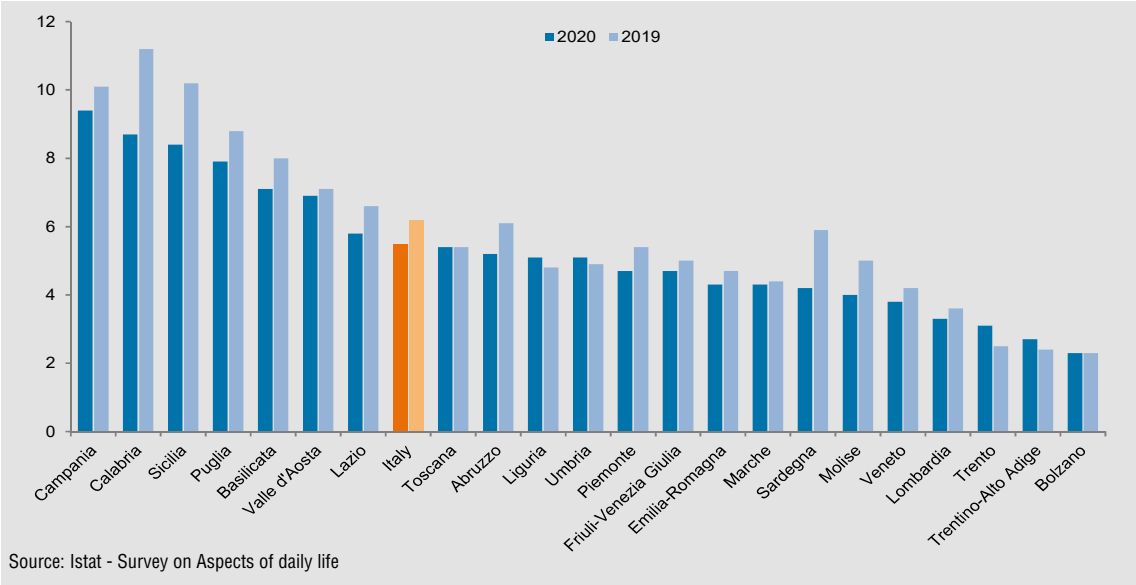
Source: Istat - Processing of data from Ispra

ed over the years throughout the Country. In particular, a great leap forward was made both by regions that already had high separate collection rates such as Valle d'Aosta (+17.9 percentage points), Sardegna, the autonomous province of Bolzano and Friuli-Venezia Giulia (respectively +9.9, +9.8, +9.6 percentage points) and by critical regions such as Basilicata, which went from 28.8% to 43.3% (+14.5). At the tail end remains Sicilia with just 23.8% of resident population living in municipalities that have exceeded the 65% target.

The gap between the Centre-North and the South and Islands in access to public utility services has narrowed for the first time since 2010

The quality of public utility services is linked above all to their accessibility. In the three-year period 2019-2021, 5.5% of Italian households said they had great difficulty in reaching at least three essential services including pharmacies, first aid, post or municipal offices, supermarkets, schools or police and carabinieri stations.
Compared to the previous three-year period 2018-2020, there was an improvement, which could be linked to the lower use of these services during the pandemic. The accessibility of services is not uniform across the Country: 4.0% of households in the North, 5.4% in the Centre and almost twice as many in the South and Islands (7.9%) state that they have encountered many difficulties. Nor is the reduction in the number of households declaring difficulties in accessing public utility services observed in 2021 uniform across the territory, it was slight in the North and the Centre and stronger in the South and Islands. The marked contraction in Southern Italy has reduced the gap with the North from 5 to 3.9 percentage points. The largest reduction, of about 2.5 percentage points, was recorded in Calabria, where households declaring difficulties fell from 11.2 to 8.7 per cent, but nevertheless Calabria remains, together with Campania and Sicilia, one of the regions experiencing the problem most (Figure 7).

Figure 7. Households reported experiencing many difficulties in reaching at least three essential services by regions - Years 2019-2020 - Percentages



Source: Istat - Survey on Aspects of daily life

The difficulties in accessing services are very much linked to municipal size. In small municipalities with up to 2,000 inhabitants, the percentage of households reporting difficulties of access rose to 8.5%, while it halved in the metropolitan areas (4.0%).

Territorial differences in water and electricity supply

The irregularity with which water and electricity services are distributed is a critical element that indicates their poor quality. The share of households declaring irregularities in the water supply in 2021 was 9.4%, up half a percentage point from the previous year. The situation is very different across the territory, with 3.3% of households complaining for this disservice in the North and 18.7% in the South and Islands, but the situation was particularly serious in Sicilia, where the percentage was as high as 29.0% and is on the rise compared to recent years.
By contrast, the situation was better in the Autonomous Provinces of Bolzano and Trento and in Valle d'Aosta, where the inefficiency affected less than 2% of households.
The frequency with which the Electricity Authority detects electric power cuts longer than three minutes without notice, has a fairly stable trend over time and is equal to 2.1 interruptions per year per citizen, on a national average.
The marked heterogeneity at the regional level - both in levels and in dynamics - traces the North-Centre-South-Islands differences as for other infrastructures, in 2020 going from 1.4 cuts in the North to 2.0 in the Centre to 3.1 cuts in the South and Islands.
The regions with the highest number of interruptions (3 or more) were Campania, Puglia and Sicilia, while for other northern regions, such as Valle d'Aosta, the problem was almost non-existent (0.7 interruptions per year per citizen).

Indicators

1. **Beds in the residential social-healthcare and social-welfare facilities:** Beds in the public or private social-healthcare and social-welfare facilities that provide residential services (assisted hospitality with overnight stay) of a social welfare and/or social-healthcare type to people in need per 10,000 inhabitants.
   Source: Istat - Residential health and social care facilities.
2. **Integrated home assistance service:** Percentage of people aged 65 and over who benefited from integrated home assistance service.
   Source: Processing of data from Ministry of Health, Health information system.
3. **Composite index of service accessibility:** Percentage of households who find very difficult to reach some basic services (pharmacy, emergency room, post office, police, carabinieri, municipal offices, crèches, nursery, primary and secondary school, market and supermarket). The indicator is a three-year average.
   Source: Istat - Survey on Aspects of daily life.
4. **Irregularities in water supply:** Percentage of households who report irregularities in water supply.
   Source: Istat - Survey on Aspects of daily life.
5. **Irregularities in electric power distribution:** Frequency of accidental long lasting electric power cuts (cuts without notice longer than 3 minutes) (average number per consumer).
   Source: Processing of data from the Italian Regulatory Authority for Energy, Networks and Environment (Arera).
6. **Seat-Km of public transport networks:** Seat-Km of public transport networks per capita in provincial capital Municipalities .
   : .Source: Istat - Survey on urban environmental data.
7. **Satisfaction with means of transport:** Percentage of users aged 14 and over who rated 8 or more (over 10) for all means of transport used regularly (more than once a week).
   Source: Istat - Survey on Aspects of daily life.
8. **Frequent users of public transport:** Percentage of population aged 14 and over who use public transport several times a week (bus, trolley bus, tram within their own municipality; bus or coach connecting different municipalities; train).
   Source: Istat - Survey on Aspects of daily life.
9. **Overall Fixed Very High Capacity Network (VHCN) coverage:** Percentage of households which are resident in an area served by a very high capacity network (FTTH).
   Source: Processing of data from Agcom.
10. **Separate collection service for municipal waste:** Percentage of resident population in municipalities with separate collection greater than or equal to 65%.
    Source: Processing of data from Ispra.
11. **Hospital beds in high-care wards:** Hospital beds in high care wards in ordinary inpatient care in public and private health care institutions per 10,000 inhabitants.
    Source: Processing of data from Ministry of Health.
12. **Hospital patient emigration to a different region:** Percentage of hospital discharges carried out in regions other than that of residence on the total discharges of residents in the region. Data refer only to inpatient discharges for "acute" care (excluding hospitalizations of "spinal unit", "functional rehabilitation", "neuro-rehabilitation", "long-term care").
    Source: Processing of data from Hospital Discharges of the Ministry of Health.
13. **Unmet need for medical examination:** Percentage of the population reporting, in the last 12 months, unmet needs for medical care (specialist examination or diagnostic examination) due to one of the following reasons: he could not pay for it, it was too expensive; inconvenience (distant structure, lack of transportation, inconvenient hours); long waiting list.
    Source: Istat - Survey on Aspects of daily life.
14. **General practitioners with a number of patients above the maximum threshold:** Percentage of general practitioners with a number of patients above the maximum threshold of 1500 patients defined by the general practitioners' contract.
    Source: Processing of data from Ministry of Health.
15. **Physicians:** Practising physicians per 1,000 inhabitants.
    Source: IQVIA ITALIA One-Key Database.
16. **Nurses and midwives:** Practicing nurses and midwives per 1,000 inhabitants.
    Source: Co.Ge.A.P.S. (Consorzio Gestione Anagrafica Professioni Sanitarie) - National database of ECM credits (Continuing Medical Education).

Indicators by regions and geographic areas

REGIONS GEOGRAPHIC AREAS	Beds in the residential social-healthcare and social-welfare facilities (a) 2018	Integrated home assistance service (b) 2020	Composite index of service accessibility (c) 2019-2021	Irregularities in water supply (c) 2021	Irregularities in electric power distribution (d) 2020	Seat-Km of public transport networks (e) 2019	Satisfaction with means of transport (f) 2021
Piemonte	115.5	2.5	4.7	3.8	1.8	5037	13.6
Valle d'Aosta/Vallée d'Aoste	114.2	0.5	6.9	1.1	0.7	669	53.9
Liguria	113.2	2.8	5.1	5.3	1.4	4231	18.1
Lombardia	85.4	2.8	3.3	2.5	1.4	10875	22.9
Trentino-Alto Adige/Südtirol	131.4	1.8	2.7	1.7	1.5	3833	51.7
Bolzano/Bozen	*111.7*	*0.5*	*2.3*	*1.7*	*2.3*	*3617*	*57.8*
Trento	*150.8*	*3.0*	*3.1*	*1.6*	*0.9*	*4027*	*44.8*
Veneto	91.2	3.8	3.8	4.0	1.4	5392	20.0
Friuli-Venezia Giulia	116.8	3.3	4.7	3.0	1.3	4164	43.1
Emilia-Romagna	104.4	3.6	4.3	3.6	1.2	2809	27.9
Toscana	61.3	3.6	5.4	6.8	1.7	3095	22.3
Umbria	65.8	2.5	5.1	3.9	1.7	1814	20.0
Marche	82.3	3.3	4.3	4.4	1.4	2220	18.9
Lazio	42.2	2.2	5.8	12.4	2.4	6370	11.1
Abruzzo	42.0	4.3	5.2	18.0	1.8	2502	26.3
Molise	69.5	3.2	4.0	12.3	1.4	774	16.7
Campania	18.5	2.3	9.4	17.1	3.3	1903	10.1
Puglia	36.4	1.8	7.9	7.1	3.2	1952	23.5
Basilicata	71.8	3.7	7.1	8.2	1.7	1186	28.9
Calabria	38.5	1.0	8.7	28.8	2.9	1646	30.0
Sicilia	52.8	3.9	8.4	29.0	3.9	1723	12.6
Sardegna	51.8	0.0	4.2	14.0	2.8	3411	31.3
North	99.0	3.0	4.0	3.3	1.4	6199	24.1
North-west	96.5	2.7	3.9	3.1	1.5	7924	20.3
North-east	102.6	3.5	4.0	3.5	1.3	3847	30.6
Centre	55.0	2.8	5.4	9.0	2.0	5004	14.5
South and Islands	38.6	2.5	7.9	18.7	3.1	1946	18.4
South	31.9	2.3	8.2	15.5	2.9	1888	18.6
Islands	52.5	3.9	7.3	25.0	3.6	2044	18.2
Italy	**69.6**	**2.8**	**5.5**	**9.4**	**2.1**	**4624**	**20.5**

(a) Per 10,000 inhabitants;
(b) Per 100 persons aged 65 and over;
(c) Per 100 households;
(d) Average number of interruptions per user;
(e) Seat-Km per inhabitant. Data measured in the capital cities of the Italian provinces;
(f) Per 100 frequent users of at least one type of transport;
(g) Per 100 persons aged 14 and over;

Frequent users of public transport (g) 2021	Overall Fixed Very High Capacity Network (VHCN) coverage (c) 2019	Separate collection service for municipal waste (c) 2020	Hospital beds in high-care wards (a) 2019	Hospital patient emigration to a different region (h) 2020	Unmet need for medical examination (i) 2021	General practitioners with a number of patients above the maximum threshold (l) 2019	Physicians (m) 2021	Nurses and midwives (m) 2020
9.8	34.7	52.2	3.1	5.7	11.6	38.9	3.7	6.7
12.5	10.4	80.6	2.9	13.6	12.1	35.7	3.7	7.3
18.6	46.9	42.0	3.5	11.9	11.0	31.8	4.7	8.2
11.3	32.1	77.0	3.1	4.5	12.2	61.5	3.8	5.8
16.8	12.7	83.3	2.3	8.4	7.3	60.1	3.4	8.2
18.2	*20.0*	*78.1*	*2.3*	*4.4*	*5.4*	*68.0*	*3.4*	*8.4*
15.4	*5.0*	*88.4*	*2.2*	*13.0*	*9.1*	*53.5*	*3.3*	*8.1*
8.2	21.0	88.3	3.8	5.3	9.4	53.3	3.6	6.8
10.2	23.5	67.8	2.5	6.3	10.6	33.1	4.0	7.3
8.8	30.2	67.6	3.2	4.8	11.2	41.7	4.4	6.8
8.5	27.0	56.2	3.0	5.5	8.3	38.9	4.5	7.1
5.2	21.7	70.1	2.3	11.3	13.0	17.7	4.6	7.6
5.5	9.9	87.0	2.7	11.7	11.3	33.6	3.9	6.8
15.4	47.6	32.1	2.9	7.1	13.2	30.8	4.8	7.0
7.8	16.4	69.2	3.0	14.5	13.8	21.1	4.4	7.1
7.4	6.4	44.7	4.3	27.3	13.2	12.4	4.2	8.3
7.2	40.8	31.7	2.4	8.7	8.9	34.8	3.9	5.8
5.3	24.4	47.3	3.2	7.8	10.2	17.1	3.9	6.9
6.8	12.6	43.3	2.8	24.9	10.6	20.6	3.4	7.4
5.9	11.4	31.3	2.4	18.7	11.2	17.6	4.0	5.7
5.9	29.6	23.8	3.2	5.9	9.0	15.2	4.5	6.1
7.6	14.6	91.0	2.3	5.4	18.3	31.0	4.9	6.4
10.7	30.1	71.6	3.2	5.6	11.1	49.7	3.9	6.6
11.6	....	67.0	3.2	5.7	11.9	51.5	3.9	6.2
9.4	....	77.8	3.3	5.5	10.0	47.1	3.9	7.0
11.3	34.7	49.4	2.8	7.5	11.4	32.5	4.6	7.0
6.5	26.8	40.5	2.8	9.7	10.6	22.5	4.2	6.3
6.5	....	40.4	2.7	11.4	10.2	24.4	4.0	6.3
6.4	....	40.5	3.0	5.8	11.3	18.7	4.6	6.2
9.4	**30.0**	**56.7**	**3.0**	**7.3**	**11.0**	**36.0**	**4.1**	**6.6**

(h) Per 100 discharges of inhabitants in the region;
(i) Per 100 persons;
(l) Per 100 physicians;
(m) Per 1,000 inhabitants;
(*) Provisional data;
(**) Provisional data. 2020 data also contains the waiver for reasons related to COVID-19.