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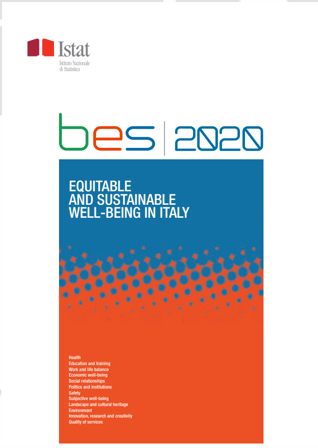
bes 2020

EQUITABLE AND SUSTAINABLE WELL-BEING IN ITALY

Health
Education and training
Work and life balance
Economic well-being
Social relationships
Politics and institutions
Safety
Subjective well-being
Landscape and cultural heritage
Environment
Innovation, research and creativity
Quality of services



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EQUITABLE AND SUSTAINABLE WELL-BEING IN ITALY

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STREETLIB

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Foreword

This year marks the tenth anniversary of the Bes project: an initiative that has not only constantly ensured an accurate and qualified monitoring of citizens' well-being and its determinants and trends, but has also progressively won a relevant place at the highest policy-makers' table.
The historical phase in which this anniversary takes place brings with it profound transformations linked to the COVID-19 pandemic, and there is no doubt that the exceptional nature of the moment, for which no one was prepared, has led to the emergence of new needs, while exacerbating both old and more recent inequalities.
The sudden change in context made it necessary to enrich the conceptual framework for the collection and processing of statistical data. There have been changes both in the sources, with new questions in the surveys providing the material to support indicators, and in the timeliness of updates, with the choice of more responsive measures with respect to short-term changes.
The interaction between our researchers and experts in the field has also led us to add some indicators to the traditional framework, while replacing others. Of the 152 indicators making-up the new set, 33 are new and integrate eight of the twelve domains of the Bes. This revision has been made with particular care and coherence with the fundamental lines of the #NextGenerationEU programme.
In this new edition of the Report, the information landscape has been enriched on issues with the greatest impact on citizens' well-being today: health and health services, digital resources, climate change and human capital, the latter in terms of both training and productive potential. The thematic enhancements and insights have been constructed to offer objective references to guide the policy action with which Europe intends to implement its strategic vision for inclusion and growth.
Ten years after the start of the project, the proposed indicators clearly show how changes in the profile of well-being in Italy have been many: in the direction of progress as much as in the persistence of critical areas, even severe ones.
As a result of continuous cuts throughout the decade, our health system has fewer beds, older doctors on average, and blocked staff turnover, with the overall effect of greater inequality in access to care. There are still too few children enrolled in nursery schools and too few young people graduating from university, and the education gap with Europe keeps widening.
The gap with other European partners is not narrowing either in terms of investment in research and development, which remains too low, or, despite progress, in the incidence of knowledge workers. At the same time, the number of young people not in education, employment or vocational training programmes (NEETs) has increased.
The quality of work in Italy remains critical, and the incidence of absolute poverty, which for seven years had remained double than in 2009, only in 2019 shows, for the first time, a slight decrease, before increasing again in 2020. As for digitalisation, internet use has been growing, but the disadvantage of the South and Islands, women and the elderly remains. Investment in the protection and enhancement of cultural heritage and cultural activities, already historically inadequate, is decreasing.
On the environmental front, there are many warning signs: water resources are increasingly critical, air quality remains alarming, land consumption is advancing and illegal building is returning to alarming levels in southern Italy.

The pandemic represented a slowdown, or even a setback, in more than one area. The Bes indicators have recorded particularly severe impacts on some of the progress achieved over ten years on the health front, reversed in just one year. The health emergency had a significant impact on an already poorly dynamic and segmented labour market and forced a halt in cultural participation. In this context, citizens' fears about their future situation are understandably on the rise and the proportion of people who are very satisfied with their lives remains low.

On the good news side, after years of decline, citizens' interest in civic and political matters has shown signs of recovery and their sensitivity to climate change continues to increase. The presence of women in decision-making places has progressed, albeit slowly. Crime has been progressively reduced. Some environmental indicators, such as those monitoring waste management, have shown a favourable trend.

This Report therefore presents a complex picture that is at once rich and contradictory. It shows a country in great distress, which nevertheless retains reserves of hope. The commitment of the institutions and the extraordinary resources made available by the #NextGenerationEU programme represent an unprecedented opportunity to intervene in a substantial, and not merely emergential, manner, for healing and recovery. In this sense, the Bes proposes to offer, today more than ever, a targeted, sensitive and reliable tool for accompanying and guiding decisions and for evaluating the results of the resulting policies.

The President of Istat
Gian Carlo Blangiardo

Warnings

CONVENTIONAL SIGNS

The following conventional signs are used in the statistical tables:

Dash

(-) a) the phenomenon does not exist;
b) the phenomemon 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

Ten years of Equitable and Sustainable Well-being (Bes)[1]

The peculiarity of the times we are living, one year after the start of the pandemic, has made even more evident the inadequacy of GDP as the only measure of a population's well-being. The importance of having a set of indicators that would measure well-being intended as a multidimensional concept, supported by the literature since the 1960s and urged by civil society, led Istat to launch in 2010, together with Cnel, the Bes project for the measurement of Equitable and Sustainable Well-being (Benessere Equo e Sostenibile). After a process of analysis open and joint with the scientific community, associations and citizens, 12 domains relevant to well-being were identified, and approximately 130 indicators were identified to measure various aspects - material conditions and quality of life – related to well-being declined in its 12 domains.
This Report adds a new element to this process, updating the system of indicators developed to follow the evolution of the concept of well-being, in order to grasp the deep transformations underway, including those brought about by the COVID-19 pandemic.

1. Main steps in ten years of the Bes project

Following the 2007 'Istanbul Declaration' and the launch of the 'Global Project on Measuring the Progress of Societies' by the OECD, a growing number of countries have launched methodological and policy initiatives on how to go 'beyond GDP'. The 'Beyond Gdp' conference, organised in 2007 by the European Commission (together with the European Parliament, the Club of Rome, WWF and OECD), brought the issue to the attention of European political leaders and, in January 2008, French President Nicolas Sarkozy set up the Commission on the Measurement of Economic Performance and Social Progress. Headed by Nobel prizes Joseph Stiglitz and Amartya Sen, and by Jean-Paul Fitoussi, the Commission concluded its work in September 2009, just after the European Commission published its recommendation 'GDP and beyond: measuring progress in a changing world' and the OECD issued the report on measuring progress of societies.
In 2010, Italy joined this international debate with the Bes project for the measurement of equitable and sustainable well-being. The project was announced on 27 December 2010 and work officially began in April 2011.
Two main aspects are considered, in order to tackle the challenge of defining the constituent elements of well-being in Italy: the first, of a political nature, concerns the identification of the relevant domains of analysis in the Italian context; the second, of a technical-statistical nature, concerns the selection of indicators that are useful for the measurement of the phenomena.
Following this approach, based on debate and sharing, Cnel and Istat have set up a 'Steering Committee on the measurement of the progress of Italian society', made up of representatives from trade unions, trade associations, the third sector, ecological associations and women's associations. The Committee, also starting from the indications provided by

1 This chapter was edited by Maria Cozzolino and Alessandra Tinto, with contributions from: Leonardo Salvatore Alaimo, Barbara Baldazzi, Emanuela Bologna, Luigi Costanzo, Lorena Di Donatantonio, Manuela Michelini, Silvia Montecolle, Miria Savioli, Stefania Taralli, Stefano Tersigni.

citizens and the results of the international experiences already carried out, developed the current system divided into 12 domains.
The initial consultation with citizens, aimed at assessing the importance the population attributes to the different dimensions of well-being, was carried out by including a set of specific questions in the 2011 "Aspects of Daily Life" survey, asking them to assign a score from 0 to 10 to a set of 15 different thematic areas related to well-being. People were also able to draw up their own ranking of well-being domains through a website dedicated to the initiative[2], which offered two tools for consultation: a short questionnaire and a blog.
A scientific commission set up by Istat and composed of various researchers was in charge of the technical-statistical component, i.e. the selection of useful indicators for measuring well-being in the 12 domains identified. On the 22nd of June 2012, just as the Rio de Janeiro Conference on Sustainable Development got underway, the list of 134 indicators identified was made public.
The first Bes report was published in March 2013, followed by a new edition every year until this eighth edition. This path has led to methodological and analytical innovations each time, with revisions in the set of indicators and the study of their distribution by social groups.
In 2016, a further advance in quality was achieved, on the one hand, through the integration with the Sustainable Development Goals (SDGs) and the sharing of a subset of key indicators within the two frameworks, and, on the other, through the inclusion of 12 Bes indicators in the Economic and Financial Document (DEF). In fact, following the procedure envisaged by the reform of the Budget Law (Law no. 163/2016), a subset of 12 Bes indicators was included in the DEF, with the aim of monitoring and assessing the effect of policies on some fundamental dimensions of the quality of life, placing Italy among the countries at the forefront in this field. In this regard, every year Istat provides the Ministry of the Economy and Finance with an update of the indicators for the last three years for their inclusion in the DEF, a task that requires the continuous acceleration of production processes and the development of statistical-econometric models for the calculation of ad hoc estimates.

2. Framework upgrading in the wake of the pandemic

The profound transformations that have characterised Italian society in the last decade and the spread of the COVID-19 pandemic, with the exceptionality of a period which has led to the emergence of new needs and exacerbated inequalities, have required work to enrich the conceptual framework of Bes. This intervention concerned, on the one hand, the data sources, with the formulation of new questions within the current Istat surveys (for example, questions on distance learning and on trust in doctors and scientists included in the 2021 Aspects of Daily Life survey). On the other hand, the timeliness of updates was enhanced further, with the replacement of some indicators that could be updated on a multi-yearly basis with others available on an annual basis. This is the case of some measures on safety, household economic vulnerability and family work asymmetry.
However, the main result of the Bes group's interaction with experts in the field is the addition or replacement of indicators in the original framework. The new set consists of 152

2 The website is no longer in use and all material can be found in the webpage of the National Statistical Institute Istat https://www.istat.it/en/well-being-and-sustainability/the-measurement-of-well-being.

indicators[3], 33 of which are new (Table 1), integrating eight of the twelve Bes domains. The integration has been carried out in coherence with the fundamental lines of the #NextGenerationEU programme, through which Europe is redesigning its strategic vision for inclusion and growth; it responds to specific knowledge needs, including the enrichment of available information on health, digitalisation, human capital (both on the training and labour sides) and climate change, with choices that are strongly oriented towards policy action.
In particular, the Health domain was strengthened with the addition of two new indicators, one on avoidable mortality and one on multimorbidity and severe limitations among people aged 75 and over, to better represent the fragilities of the very old and the weaknesses of the health system and thus facilitate the identification of areas on which to intervene.
The Quality of services domain has also been enriched with new indicators, which offer more detailed information on the health services sector: the availability of specialist doctors, general practitioners and paediatricians and nurses, hospital beds in high-care wards, the unmet need for medical examinations, hospital patient emigration to a different region, the share of doctors with more than 1,500 patients. In the same domain, moreover, the indicator on the separate collection of urban waste has been improved (now expressed in terms of resident population in the municipalities that have reached the target of 65% separate collection), and the information on mobility has been expanded, adding to the indicators of supply and satisfaction with the quality of public transport the percentage of people who use public transport on a daily basis.
The digital transition and the acceleration imposed by the COVID-19 emergency made it necessary to develop, in the Innovation, research and creativity domain, a dimension related to the diffusion of digital technology, at the heart of the #NextGenerationEU strategy. The chosen indicators - regular internet use, availability of at least one computer and Internet connection in the household, share of enterprises with web sales to end customers, municipalities with online services for families, digital skills of the employed - are oriented to capture the effects of digital technology diffusion on well-being in terms of opportunities offered to citizens and enterprises.
As for the human capital aspects, the Education and training domain is enriched with the introduction of an indicator on children enrolled in nursery school, one on graduates in technical and scientific disciplines (STEM) and a better specification of the cultural participation indicators.
In 2020, the health emergency has forced many sectors to make a sudden shift to working from home; in order to monitor this mode of working a new indicator has been included in the Work and life balance domain, and a new experimentation has been conducted to provide annual estimates of the indicator on asymmetry in family work.
Finally, the set of environmental indicators has been strengthened with climate change-related aspects, introducing new weather-climate measures and a subjective indicator on concern about climate change.

3 The complete list of the 152 indicators is available on the Istat website, https://www.istat.it/en/well-being-and-sustainability/the-measurement-of-well-being/bes-report.

Table 1. New indicators introduced in the Bes 2020 framework

DOMAIN	INDICATOR	SOURCE
HEALTH	Avoidable mortality (age 0-74)	Istat, Vital register on deaths and causes of death
	Multimorbidity and severe limitations (75 years and over)	Istat, Survey on Aspects of daily life
EDUCATION AND TRAINING	Pupils aged 0-2 years enrolled in early childcare services	Istat, Survey on Aspects of daily life
	STEM graduates	Istat,Processing of Ministry of Education, University and Research data
	Outdoor cultural participation	Istat, Survey on Aspects of daily life
	Reading books and newspapers	Istat, Survey on Aspects of daily life
	Use of libraries	Istat, Survey on Aspects of daily life
WORK AND LIFE BALANCE	Share of household work time carried out by women in a couple on the total of the household work time	Istat,Time use survey; Survey on Aspects of daily life
	Employed persons working from home	Istat, Labour Force Survey
ECONOMIC WELL-BEING	Housing cost overburden rate	Istat, Eu-Silc
SAFETY	Fear of crime rate	Istat, Survey on Aspects of daily life
	Social decay (or incivilities) rate	Istat, Survey on Aspects of daily life
	Perception of crime risk	Istat, Survey on Aspects of daily life
ENVIRONMENT	Air quality - $PM_{2.5}$	Istat, Processing on Ispra data
	Concern for climate change	Istat, Survey on Aspects of daily life
	Municipal waste collected	Istat, Processing on Ispra data
	Warm Spell Duration Index	Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data
	Extreme precipitation events	Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data
	Consecutive Dry Days	Copernicus - European Union's Earth Observation Programme, Gridded dataset of climate reanalysis, ERA5 hourly data
INNOVATION, RESEARCH AND CREATIVITY	Regular internet users	Istat, Survey on Aspects of daily life
	Availability of at least one computer and Internet connection in the household	Istat, Survey on Aspects of daily life
	Municipalities with online services for families	Istat, Survey on information and communication technology in public administrations
	Enterprises with web sales to end customers	Istat, Survey on information and communication technology in enterprises
	Employed persons with basic or above basic overall digital skills	Istat, Survey on Aspects of daily life
QUALITY OF SERVICES	Overall Fixed Very High Capacity Network (VHCN) coverage	Istat, Processing of Agcom data
	Frequent users of public transport	Istat, Survey on Aspects of daily life
	Hospital beds in high-care wards	Istat, Processing of Ministry of Health data
	Physicians	IQVIA ITALIA, One-Key Database
	Nurses and midwives	Co.Ge.A.P.S. (Consorzio Gestione Anagrafica Professioni Sanitarie), National database of ECM credits (Continuing Medical Education)
	Separate collection service for municipal waste	Istat, Processing of ISPRA data
	Hospital patient emigration to a different region	Istat, Processing of data on Hospital Discharges of the Ministry of Health
	Unmet need for medical examination	Istat, Survey on Aspects of daily life
	General practitioners with a number of patients above the maximum threshold	Istat, Processing of Ministry of Health data

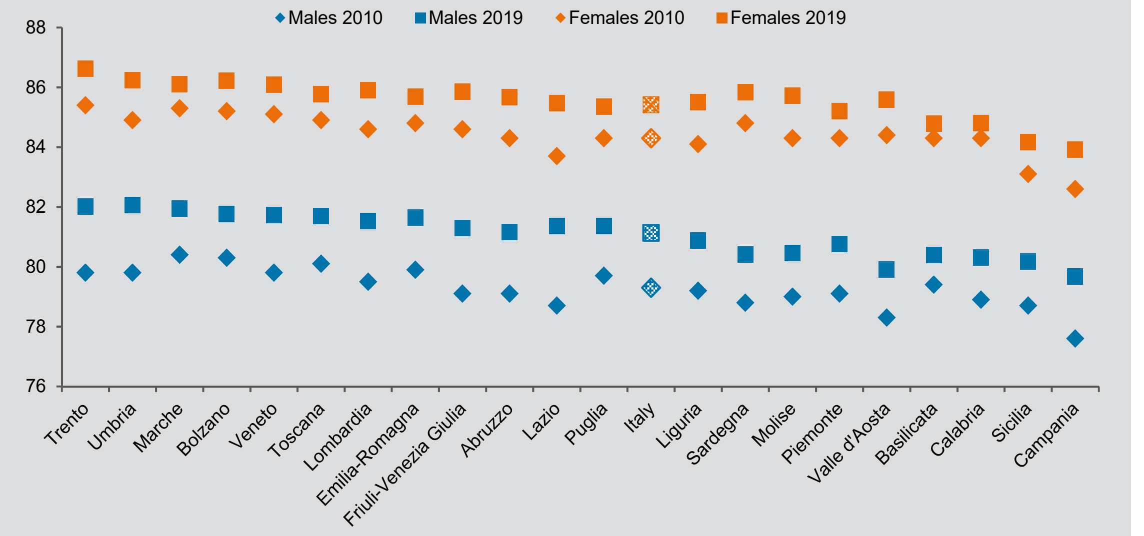
3. The evolution of Equitable and Sustainable Well-being in Italy

How have the indicators for the various domains evolved since the Bes project began? Has our Country made any progress and are any improvements in material conditions and quality of life perceived as such by citizens, thus increasing the assessment of their level of well-being?
An overview of the last ten years shows unequivocally critical trends in terms of resistance and resilience to external shocks in Italy's socio-economic situation. In the face of negative events that have affected the international scene, our Country has shown a more marked and lasting worsening trend than others. This is also true in the case of the COVID-19 crisis, which, while affecting the entire Eurozone and the rest of the world, is hitting largely the most fragile countries, including Italy. Hence the need and extreme necessity to initiate a virtuous process of development, guided by the identification of the strongest imbalances, which will lead to a path of greater dynamism and increase our capacity and speed of recovery. With this in mind, we will read the indicators of the various domains in a sequence that highlights where the shortcomings and slowness of our system's functioning lurk, the reasons for the delays, and the new risks of backwardness.

Ten years of progress in health cancelled out in a single year

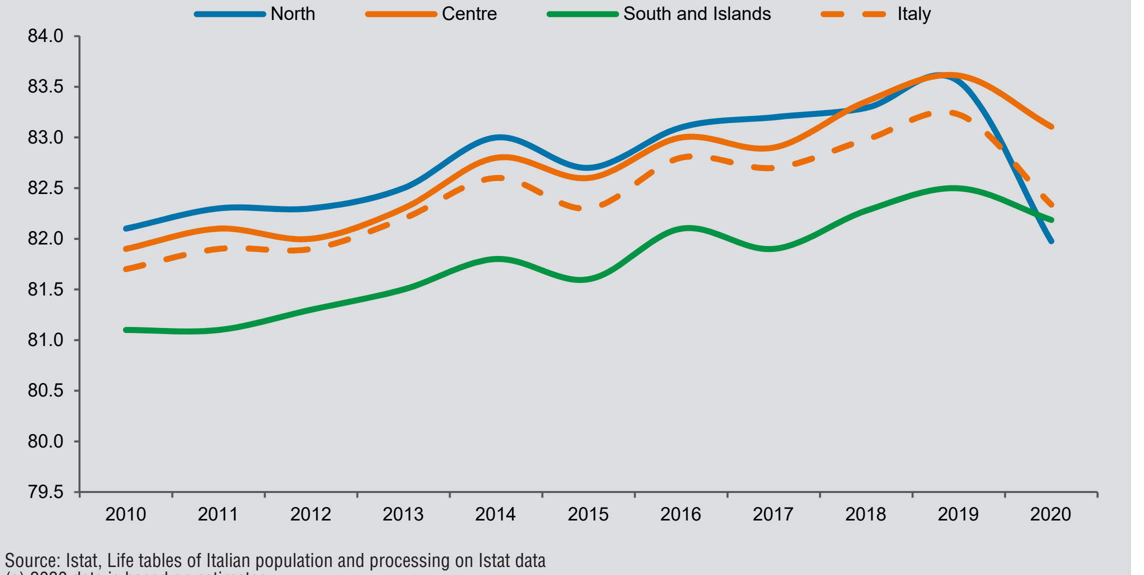
Health is a crucial dimension of well-being - first in the ranking of importance of the domains drawn up by citizens in the initial consultation phase - which is now severely affected. Over the decade, life expectancy at birth has shown progressive improvements, accompanied by positive data on life expectancy without limitations at 65 years of age, cancer mortality, mortality from dementias in the elderly, infant mortality and sedentariness. Between 2010 and 2019, men benefited more of the positive evolution, and they caught up, albeit partially, women. The latter gained just one year in life expectancy at birth over the decade, compared with two years gained by men. At the territorial level, a certain heterogeneity can be observed: for example, in Lazio, men have gained almost three years and women about two; at the opposite extreme Basilicata and Calabria, where progress is measured at just over one year for men and only six months for women (Figure 1). This overall positive picture, albeit with evident geographical inequalities, has been heavily affected by the COVID-19, which has cancelled, completely in the North and partially in the other areas of the country, the gains in life expectancy at birth accrued in the decade. It is a setback that will take a long time to be fully recovered (Figure 2).

Figure 1. Life expectancy at birth, by gender and region. Years 2010 and 2019. In years



Source: Istat, Life tables of Italian population

Figure 2. Life expectancy at birth, by geographic area. Years 2010-2020 (a). In years

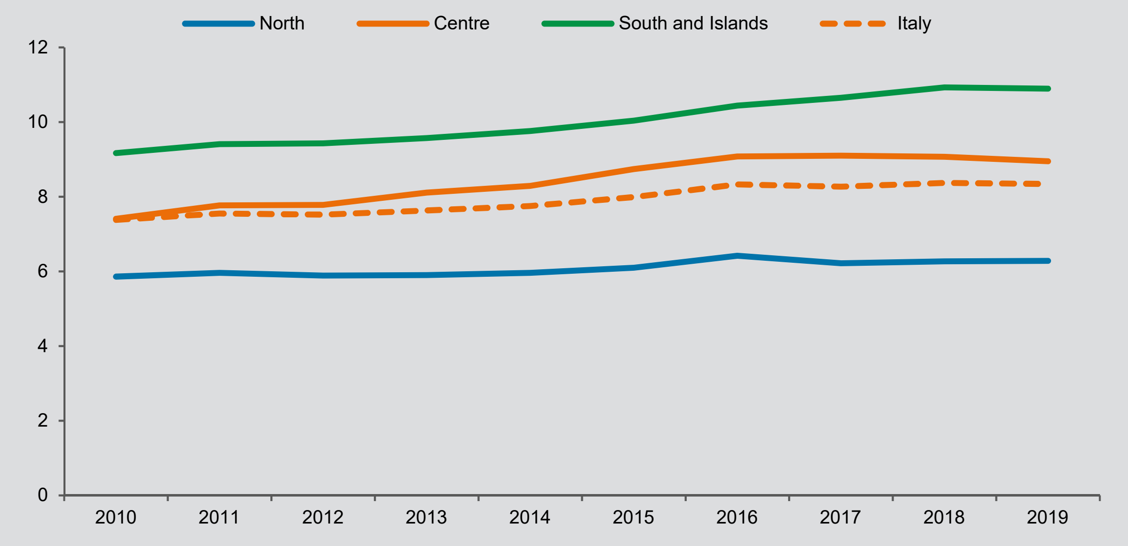


Source: Istat, Life tables of Italian population and processing on Istat data
(a) 2020 data is based on estimates.

In ten years, fewer hospital beds, older doctors and greater inequality in access to care

Indicators on quality of health services can provide useful elements for assessing the situation in which the COVID-19 pandemic has occurred and understanding what tools are available to recover as quickly as possible from the crisis.
Between 2010 and 2018, hospital supply has been changing, with a reduction in facilities and beds. In particular, the number of beds decreased by an average of 1.8% per year, to reach, in 2018, a figure of 3.49 beds – ordinary and day hospital beds – per 1,000 inhabitants.
During the same period, the number of beds in intensive care units also fell (from 3.51 per 10,000 inhabitants in 2010 to 3.04). At the same time, the data show a relative worsening of the chances of care in some areas: the hospital patient emigration from the southern regions and from the Centre to a different area, already significantly higher in 2010, has been constantly growing since then and the gap between territories has widened further (Figure 3). It is very likely that the figure for 2020 will show a decrease, which, however, will not be interpreted as a positive element of reduction of territorial inequalities, but rather as the result of the limitations determined by the measures taken to combat the COVID-19 pandemic and the decrease in services resulting from the health emergency.

Figure 3. Hospital patient emigration to regions different from that of residence for ordinary acute hospital admissions, by geographic area of origin. Years 2010-2019. Per 100 discharges of residents in the region



Source: Istat, Processing of data on Hospital Discharges of the Ministry of Health

With regard to the availability of health personnel, Italy ranks among the top European countries in terms of number of doctors - specialists, general practitioners and freely chosen paediatricians working in the public and private health system - per resident population. In recent years, this ratio has been increasing slightly, rising from 3.9 per 1,000 inhabitants in 2013 to 4 in 2019. The average age of doctors is, however, very high (Figure 4) and the overload of patients on GPs appears to be increasing, especially in northern Italy (Figure 5). The situation of nurses is particularly critical: the number of nurses and midwives increased until 2017 (from 5.3 per 1,000 inhabitants in 2013 to 6.1) and remained stable in the following years. The ratio of nurses to population is very unbalanced compared to other countries: Germany, for example, has more than twice as many nurses per inhabitant than Italy.

Figure 4. Doctors aged 55 years and over in Italy and selected European countries. Years 2010-2018. Per 100 doctors

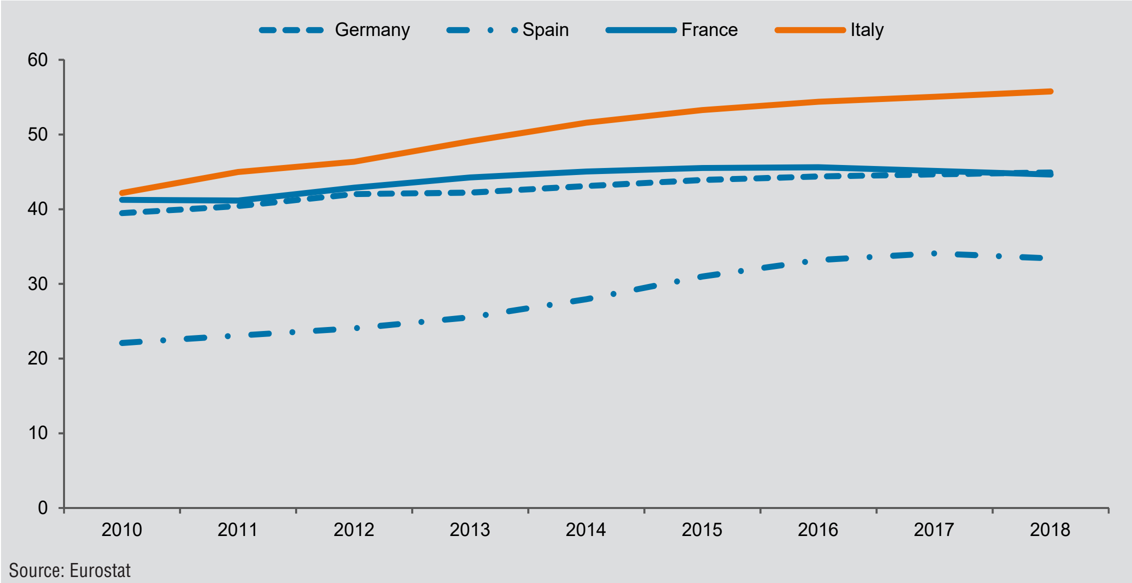
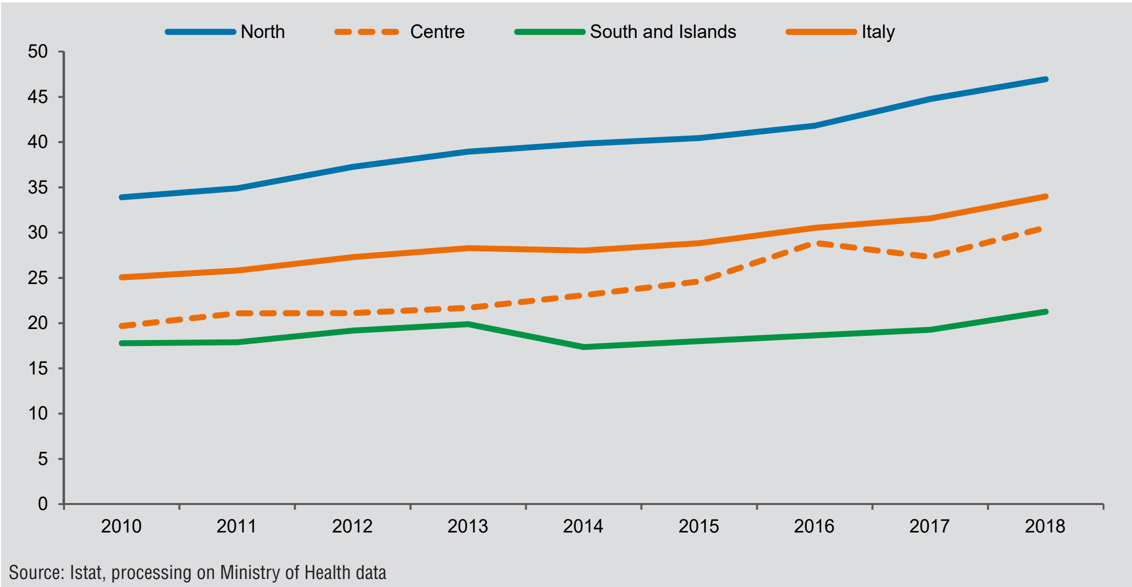


Figure 5. General practitioners with a number of patients above the maximum threshold of 1.500 by geographic area. Years 2010-2018. Percentage values

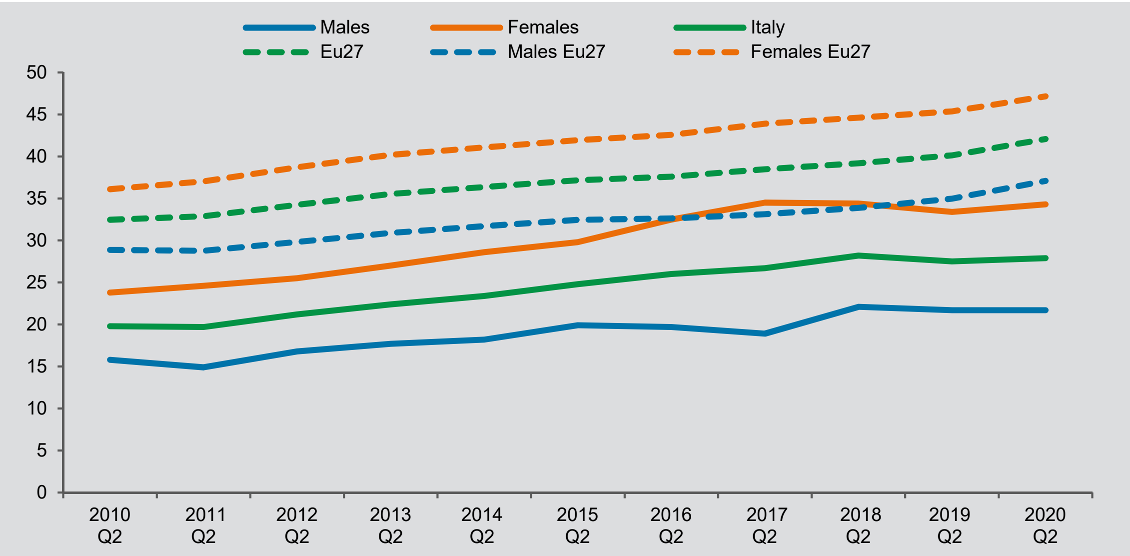


Too few children in nurseries and too few university graduates. The education gap with Europe continues to widen

Early childhood education and care is key to any future learning accompanied with positive effects on behaviour. At the same time, it involves a lighter workload on families, in particular women. Although the percentage of children in childcare and nurseries has increased over time, the 33% target set by Europe for 2010, has not been yet reached after ten years

(in the three-year period 2018-2020 we were at 28.2%). Moreover, indicators show improvements in education but they are not enough to keep the pace with Europe. In the second quarter of 2020, 62.6% of people aged 25-64 had a upper secondary education level (compared with 54.8% in 2010) that is however still 16 percentage points behind the European average (79%). This gap has unfortunately not narrowed yet. The likelihood of new generations to graduate with a college and tertiary degree has increased but, differently from what is happening in the rest of Europe, the positive trend appears to have halted in the last four years. The percentage of people aged between 30 and 34 having completed tertiary education went from 19.8% in 2010 to 27.9% in 2020, which is 14 percentage points less than the Eu27 average (42.1% in the second quarter of 2020). This growth pattern was even more significant for women, 13 percentage points more than male in 2020 (the gap was 8 in 2010). If compared with the rest of Europe however, the female figure still lags behind, not even reaching the 2010 European average (see Figure 6).
The distribution of those having completed tertiary education among the various areas of study indicate a strong imbalance. Few students choose scientific and technological subjects (STEM). There were fewer Italian male students enrolled in these subjects compared with the European average (35% vs 40.1% in 2018). Women are underrepresented in STEM fields, as well as in the rest of Europe; 16.3% of Italian female undergraduates versus 14.6% in Eu27.

Figure 6. People aged 30-34 with tertiary education in Italy and in Eu27 by gender. Years 2010-2020 II quarter. Percentage values



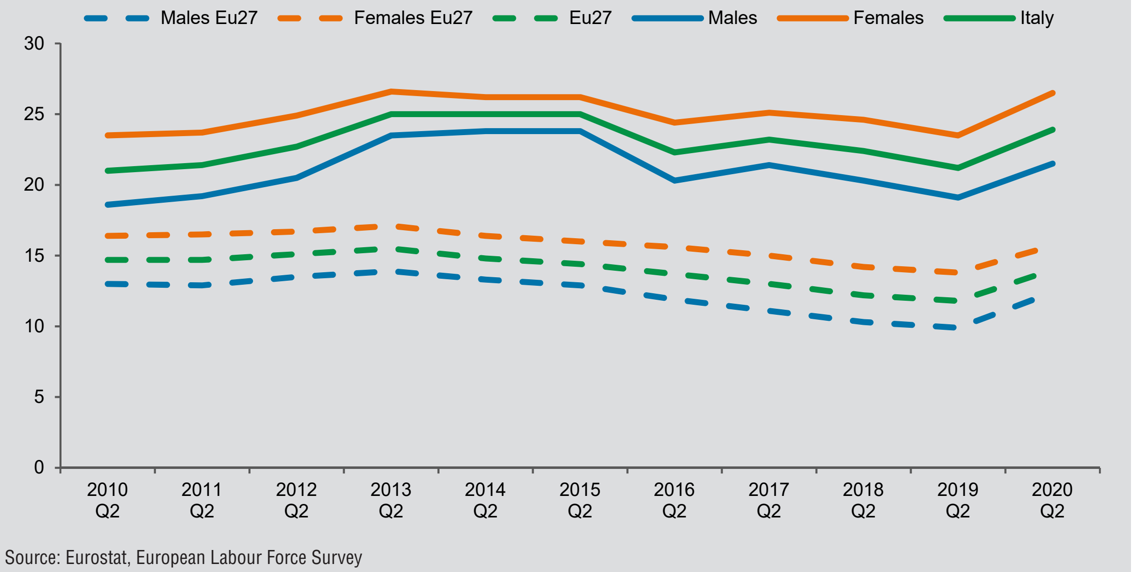
Source: Eurostat, European Labour Force Survey

Decrease in early school leavers but growth in NEET

A figure that worries is the percentage of early school leavers. In the second quarter of 2020, 13.5% of young people aged between 18 and 24 with at most lower-secondary education are no longer engaged in any kind of further education or training. This figure, while alarming, is lower than the one recorded in 2010 (18.6%). Early school leaving is strongly

linked to the family background. In 2019, those with parents with a lower secondary school diploma had a 24% probability of leaving school. This probability drops to 5.5% if the parents have a higher secondary school diploma and to 1.9% if they have a university degree. Similarly, only 2.5% of children with at least a parent in a qualifying profession leave their studies while this number increases to 24%, one in four children, in children with parents with unskilled jobs.
Also in this case, women perform better. In 2020, 10.2% of young women aged 18 to 24, dropped out of school compared to 16.6% of young men (quarterly figures). There was a positive trend between 2010 and 2019 with a 27% decrease in early school leaving. The drop is more marked among males who narrow the gap with females from 6.5 percentage points in 2010 to 3.9 in 2019 (yearly figures).
Particularly high is the school dropout rate among foreigners if compared with the Italian student population, 36.5% against 11.3%, figure calculated in 2019 and pretty much unchanged in the last ten years.
Low investments in human capital lead to low employment opportunities and this in turn is responsible for a high percentage of young people aged 15 to 29 who are neither studying nor working (the so called NEET: "not in education, employment, or training"). In the last decade, after some years of decrease, this phenomenon has once again began to grow, involving 23.9% of young people in the second quarter of 2020 (compared with 21% in the second quarter of 2010). In the negative periods, such as the second quarter of 2020, the NEET tend to also increase in most European countries. In Italy, however, the increase was even more marked, widening the gap with the rest of Europe (it was roughly 6 percentage points higher in the second quarter of 2010 and increased to 10 percentage points in 2020) (Figure 7).

Figure 7. People aged 15-29 not in education, employment or training in Italy and in Eu27, by gender. Years 2010-2020 II quarter. Percentage values

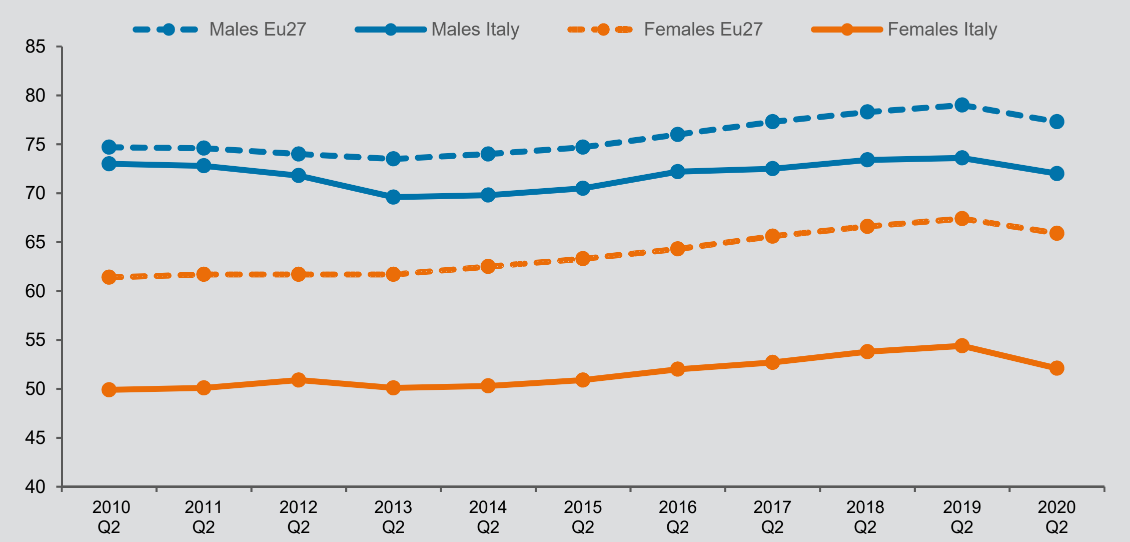


Source: Eurostat, European Labour Force Survey

Strong impact of the pandemic on a weak and segmented labour market

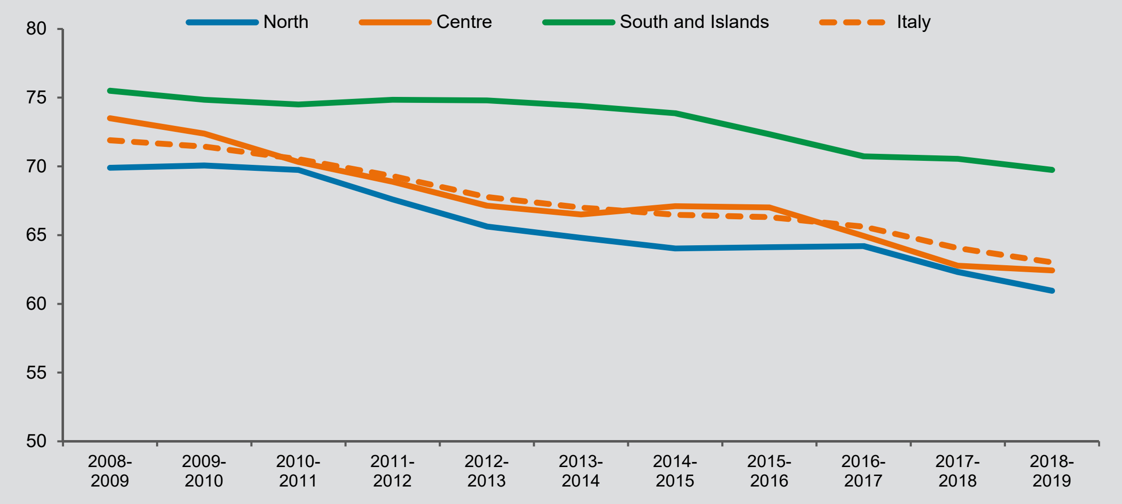
Insufficient progress in the field of education together with a dual labour market and a weak propensity to innovate severely limit the chances of growth and resilience.
The indicators that capture employment opportunities and their distribution together with those measuring the sharing of the care burden within the family which in turn affect female participation in the labour market clearly certify Italy's weaknesses and tendency to stagnate.
Over the last ten years, the employment rate in Italy has remained more or less stable, with its lowest point during the recession phases. The slow recovery in employment, following the economic and financial crisis, was however insufficient to return to the 2008 levels, especially for men, young ones, people living in the south and Islands of the Country and the less educated.
The divide with Europe has furtherly widened, in particular concerning women. These, despite improvements in the last decade, still carry most of the workload within the family. In 2010, in Italy the rate of employment of women aged 20-64 was 11.5 points lower than the European average. In 2020, this difference increased to 14 points lower (Figure 8). The index measuring the asymmetry in the distribution of hours dedicated to family care is high particularly in the South and Islands where it took years to reach levels that in the North were observed in 2008. In the northern regions, however, a fair and uniform distribution of the workload within the family has not been reached yet. In the period 2018/2019 the percentage of workload carried out by women aged 25-44 in families where both worked (asymmetry index) was still 60.9% (Figure 9).

Figure 8. Employment rate (age 20-64) in Italy and Eu27 by gender. Years 2010-2020 II quarter. Percentage values



Source: Eurostat, European Labour Force Survey

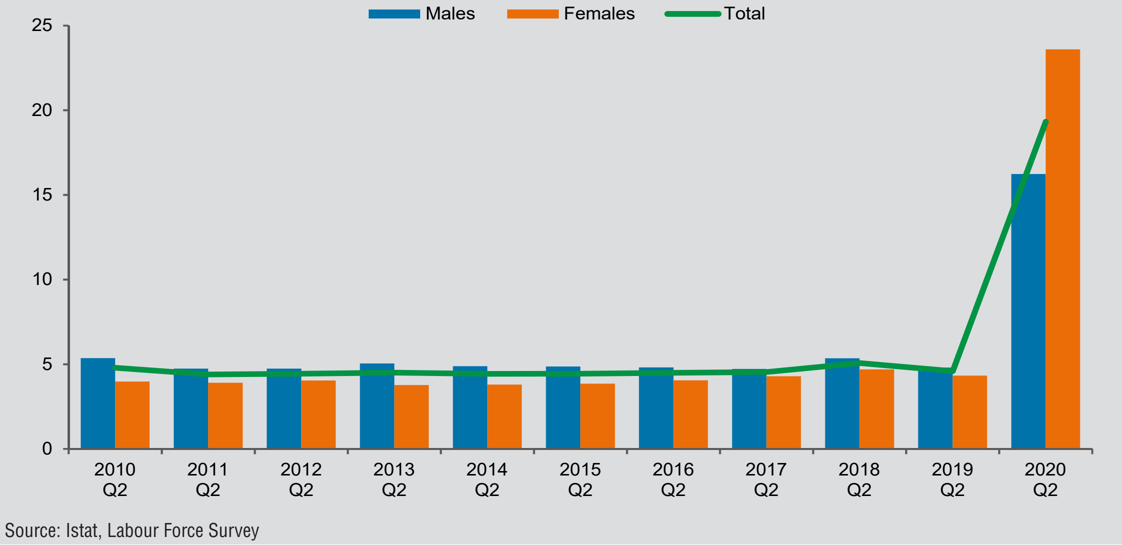
Figure 9. Share of household work time carried out by women in a couple on the total of the household work time (asymmetry index) in couples with women aged 25-44 by geographic area. Years 2008/2009 - 2018/2019. Percentage values (a)



Source: Istat, Processing on Time use and Aspects of daily life surveys data
(a) Data from 2009-2010 to 2012-2013 are estimates; data from 2014-2015 to 2018-2019 are estimates subject to revision.

In addition, rigidity in the working organization limits the possibilities to improve one's work-life balance and thus discouraging the female participation in the labour market. Until 2019, for example, only a limited proportion of activities and employees worked from home, only about 5%. This figure then increased in 2020 to include over 20% of women and slightly above 15% of men and only because of the COVID-19 pandemic and the need to both reduce its spread and continue activities that would have been otherwise interrupted (Figure 10). This increase was the result of a shock, which in turn led to a new approach to flexibility highlighting both opportunities and weaknesses. Once the emergency due to the pandemic will be behind us, this experience might serve as a valuable tool to review organizational labour models.

Figure 10. Employed persons working from home by gender. Years 2010-2020 II quarter. Percentage on total employed people

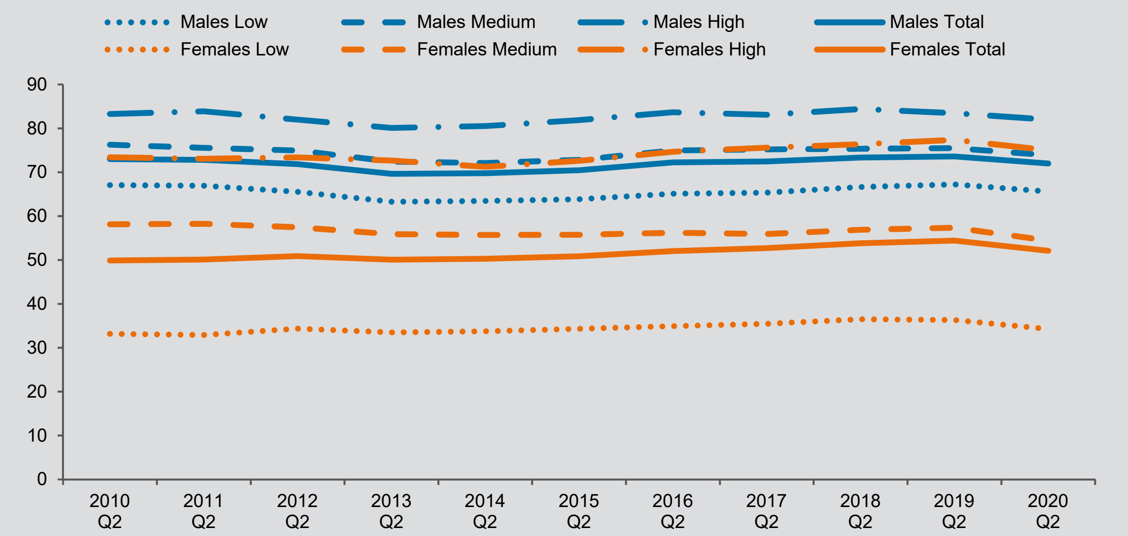


Source: Istat, Labour Force Survey

Education as a strong engine to reach well-being

A key factor that increases job prospects and more generally affects other aspects of well-being is education. As a matter of fact, the employment rate among university graduates, the only ones who managed to return to the pre-crisis levels, is higher than among those without a degree. It is 13 points higher than among those with a higher secondary diploma and 27 point higher if compared with those with a lower secondary diploma. This last figure increases to 40 percentage points (39.7%) among women (Figure 11). Education is also connected to longevity, an improved health and balanced lifestyle. In Italy, as in all other European countries, those who are unskilled and with low income are more likely to fall ill and generally have a lower life expectancy.

Figure 11. Employment rate (age 20-64) by gender and level of education (a)**. Years 2010-2020 II quarter. Percentage values**



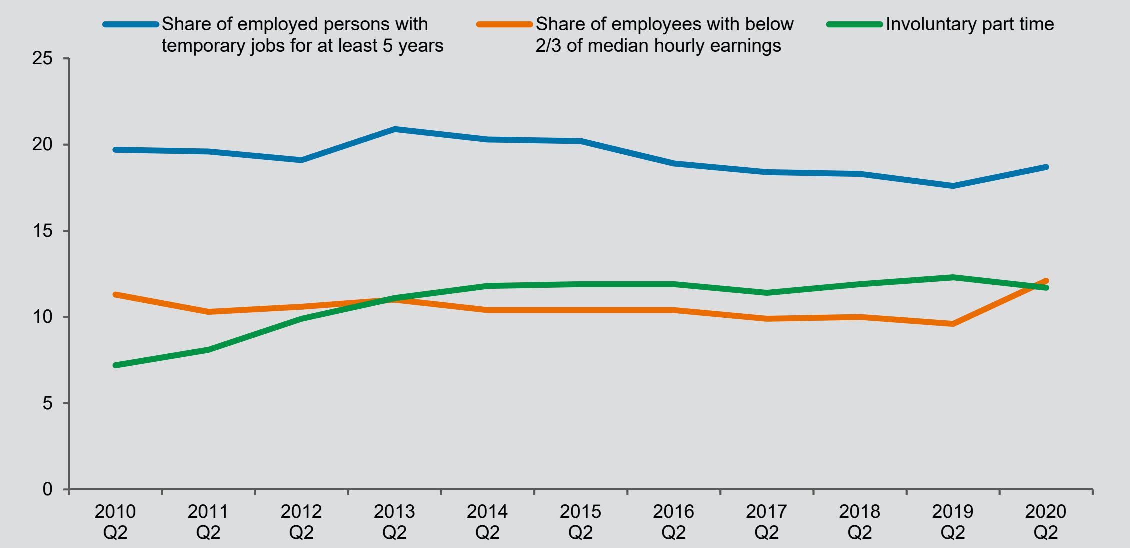
Source: Istat, Labour Force Survey
(a) Low level of education: Isced 0-2; Medium level of education: Isced 3-4; High level of education: Isced 5-8.

Problems with quality of work in Italy

A peculiar problem, that perhaps needs to be addressed with a specific focus, is the quality of work in our Country. The coronavirus pandemic is producing particularly deep and intense effects on it.

Over the decade, there has been a growth in the number of non-voluntary part-time workers, reaching 12% in 2015. There has also been an increase in the number of people working on temporary contracts. This phenomenon halted in 2013 when it had peaked at 20,9% but in 2020 it once again increased: in the second quarter of last year, the share of workers having only fixed term contracts for an extended period of time went from 17,6% to 18,7%. The reduction in the overall number of fixed-term workers, concentrated in those areas most vulnerable to the pandemic, increased the weight of the long-term component. Moreover, in the second quarter of 2020, after years of general stability, the percentage of employees with low wages (hourly wage less than two thirds of the median hourly wage) increased (Figure 12).

Figure 12. Share of employed persons with temporary jobs for at least 5 years, employees with below 2/3 of median hourly earnings and involuntary part time. Years 2010-2020 II quarter. Percentage values



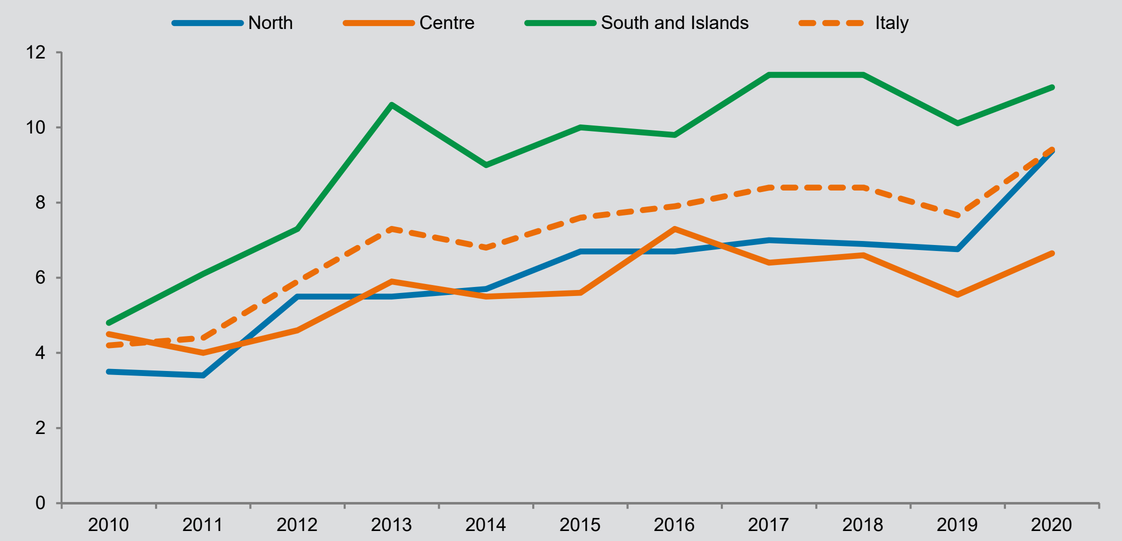
Source: Istat, Labour Force Survey

Poverty, doubled in 2012, increases once again as a result of the pandemic

The poverty trends in the last ten years confirm Italy's difficulty in recovering. During the first phase of the 2008 financial and economic crisis, the risk of poverty was limited thanks to social safety nets and families who helped young ones. Starting with the two-year period 2012-2013, that is the second downturn, the risk of poverty spread to larger segments of the population and its incidence doubled. Only in 2019, that is seven years later, there was a first slight decrease in the indicator with 7.7% of people in absolute poverty compared with 8.4% in 2018, when citizenship income was implemented replacing the previous inclusion income program (so called REI). Nevertheless, it must be pointed out that the incidence of absolute poverty remained, also in 2019, double compared to the pre-crisis levels.

A preliminary estimate for 2020 identifies over 5.6 million people in absolute poverty, with an average incidence of 9.4%, a significant increase compared to 2019. This figure is also the highest since 2005 when the historical series of the indicator began (Figure 13). Poverty spreads particularly in the North - since it was hit the most by the pandemic – the percentage of people in absolute poverty going from 6.8% to 9.4%. The incidence of absolute poverty also increases in the Centre and South and Islands of the nation but not as dramatically – respectively from 5.6% to 6.7% and from 10.1% to 11.1%. Households with children and teenagers are especially affected. The incidence of poverty among under 18 year olds increases by more than two percentage points (from 11.4% to 13.6%, the highest figure since 2005) with a total of 1,346,000 children and teens in poverty, an increase of 209,000 over the previous year. The increase is also evident among young adults (aged 18-34) from 9.1% to 11.4%. Finally, among individuals aged 65 and over, the incidence remains at 5.3%.

Figure 13. People living in absolute poverty by geographic area. Years 2010-2020 (a).**Percentage values**

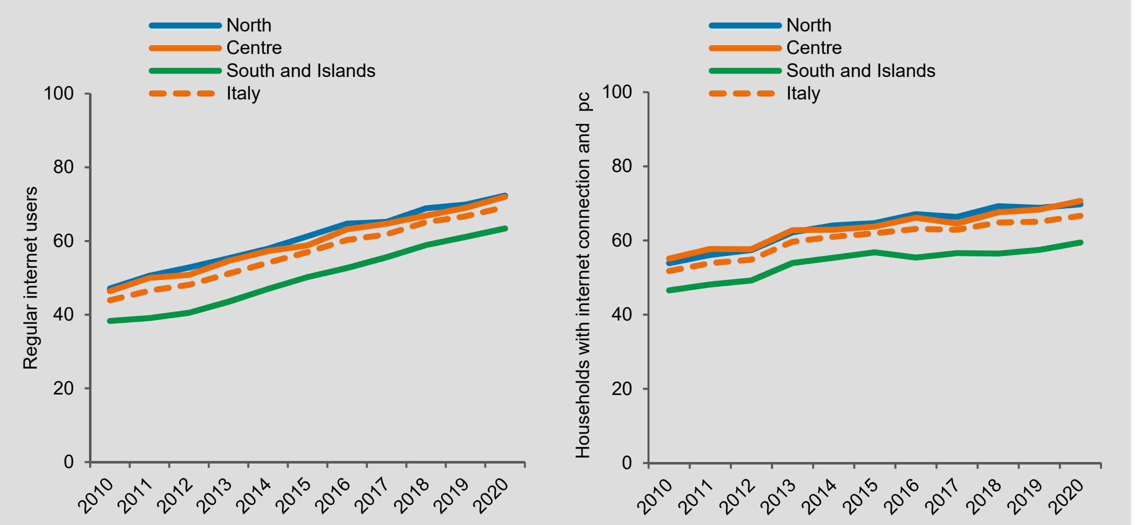


Source: Istat, Household Budget Survey
(a) 2020 data are preliminary estimates.

Growth in internet use, digital divide of the South and Islands with the rest of the nation remains and women and senior citizens continue to lag behind

A particular area of skills and equipment, key to well-being, involves the propensity to digitalize, especially in light of the sanitary emergency brought about by the pandemic. The indicators used to monitor obstacles excluding or preventing complete access to digital services include use of and connection to internet together with the presence and availability of at least one computer, including tablets, in the family. Both indicators show significant improvements in the last ten years, even though in different ways. Use of internet has grown at a quicker pace, even compared with the average of other European nations. However, the positive trend moved at different speeds depending on age, gender and place of residence. The result is that families living in the South and Islands lagged behind families in the North when it came to availability of a computer and online connection by 10 percentage points in 2020, 3 more than in 2010. In addition, residents in the South and Islands suffered a persistent delay in regular use of internet (Figure 14). On average, the propensity to use internet among women is now close to that of men, but it remains very low among people aged 75 and over (80 percentage points less compared to teenagers aged 15-19), especially females.

Figure 14. Percentage of individuals aged 11 and over who used the internet at least once a week in the 3 months before the interview (regular internet users) and households with internet connection and at least one computer by geographic area. Years 2010-2020 (a). **Percentage values**



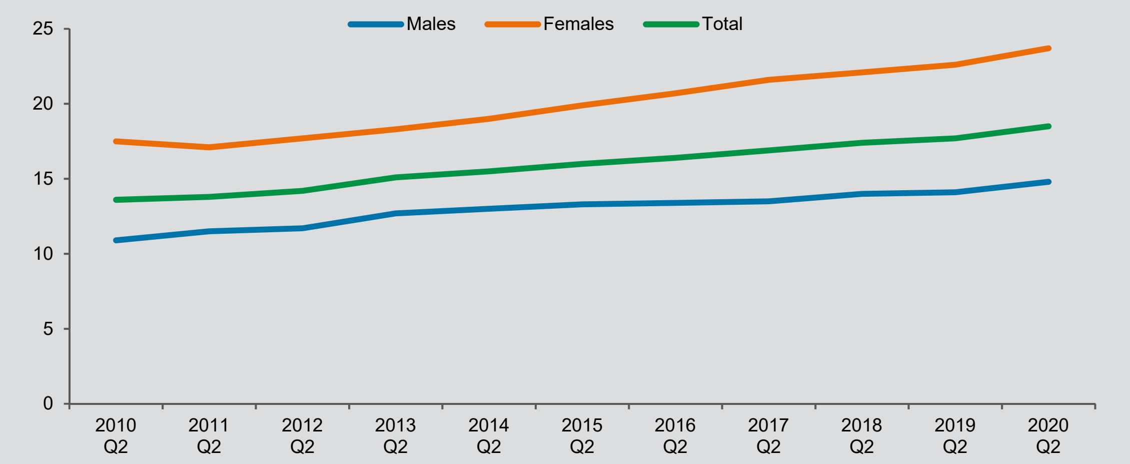
Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Although the number of knowledge workers increases so does the distance with Europe

The indicators chosen to measure the spread and use of competencies certify the ability of our system to employ the more educated human capital and optimise its potential effects on innovation. The impact of knowledge workers (those with a university degree employed in scientific and technological fields), on the total employment has constantly increased in the last ten years (from 13.6% to 18.5%) and has continued to do so even during the first year of the pandemic (Figure 15). This occurred as the balance, over the decade, between the increase in knowledge workers (+36%) and the substantial stability of total employment (+0.25%). Women have certainly contributed to a larger extent in achieving this result: between 2010 and 2020 the number of female knowledge workers increased more than that of male knowledge workers (39.5% against 32.8%). In addition, the feminisation rate (F/M) went from 1.1 to 1.2.

These figures confirm on one hand the protective effect of education against occupational shocks and on the other hand, the strength of demand for qualified labour which is key for any future occupational prospects in the Country and more job opportunities for women. However, Italy continues to lag behind the rest of Europe. In 2019, the gap between the percentage of knowledge workers in Italy and the Eu28 average is more than 6 percentage points (17.6% against 23.9%) and it has widened further as of 2010 by -5.6 percentage points, the difference between 13.4% in Italy and 19% in the Eu28.

Figure 15. Percentage of employees with tertiary education (ISCED 6-7-8) in scientific-technological occupations (ISCO 2-3) on total employees by gender. Years 2010-2020. Values per 100 workers

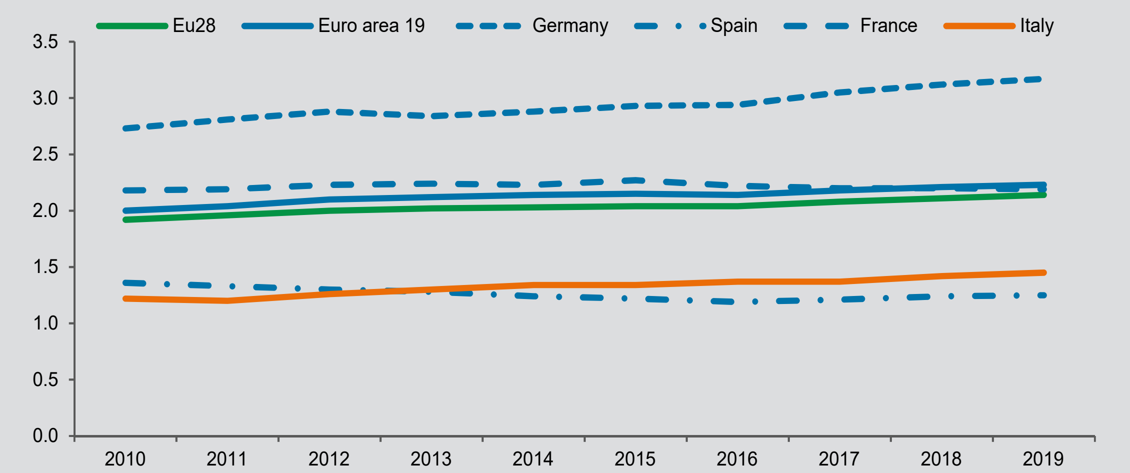


Source: Istat, Labour Force Survey

Inadequate investments in research and development, the gap between Italy and Europe does not narrow

When considering the investments made by our Country in research and development, it is clear how insufficient these are to produce enough innovation. The R&D intensity, measured as the relationship between investments in research and development (public and private) and GDP, is consistently below the European average, far from the 1.53% target set at a national level within the "Europe 2020" strategy. Only the regions in the Centre and North of the Country managed to reach this target in 2018. While the distance from the Eu28 average has decreased over the years, the national position within Europe has not changed significantly. The gap between Italy and Europe remains wide and it increases with Germany (Figure 16).

Figure 16. Research and development *intra-muros* in Italy and in the European Union. Years 2010-2019 (a)**, Percentage of GDP**



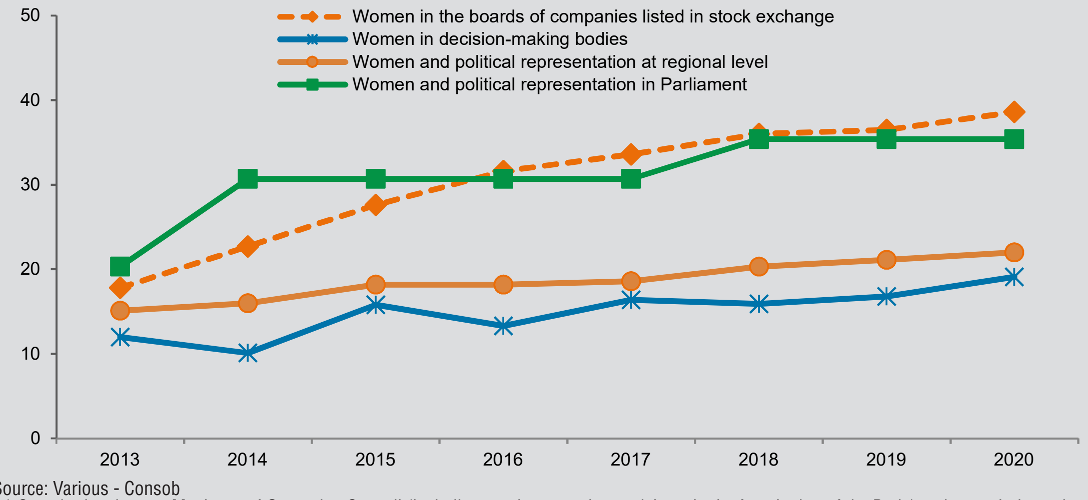
Source: Eurostat
(a) 2019 data are provisional.

The scenario outlined seems to suggest a series of interrelations connecting a lack of dynamism of our employment rates to the particular characteristics of the labour demand, the rigidity and the shortage of the care service supply and the sluggish pace of our innovation processes. The low level of innovation negatively affects the labour demand and tends to favour non-qualified labour. This negative effect is amplified within the female work population. A non-qualified and less productive job is underpaid and insufficient in compensating for the opportunity cost of working particularly high for women due to the distortions generated by the asymmetry in redistributing the family care charge between men and women. This asymmetry is exacerbated by the lack of services that could improve the work-life balance. In addition, the opportunity cost is even higher due to the distorted and different tax treatment regarding the deductions of the dependent spouse. This in turn further discourages low income married women.

More women slowly appear in decision-making bodies

In addition to the above mentioned disincentives there are others depending on gender discrimination. In Italy a law was implemented (the Golfo-Mosca law n.120/2011) in 2012 that called for a quota of women to be appointed in a company's board and in the board of auditors of listed companies. The underlining principle is that a gender balance in the boardroom can determine a change in the company's policies and improve the general working conditions for women. Figure 17 shows that while the presence of women in corporate board is progressively increasing (38.6%) as a direct consequence of the law, it is still limited in other areas of society and the economy. In the national Parliament there are over than 35% of women. Instead, inside regional councils the percentage of women stands at 22%, number that is slowly increasing. In other institutions such as the institutional court, the high judicial council, other Authorities (i.e. privacy, communications, competition and market), the diplomatic corps, taken as a whole, the number of women is still small even if slowly increasing. It reached 19.1% in 2020.

Figure 17. Women on corporate board, in decision-making bodies, regional assemblies and national Parliament (a). Years 2013-2020. Percentage values

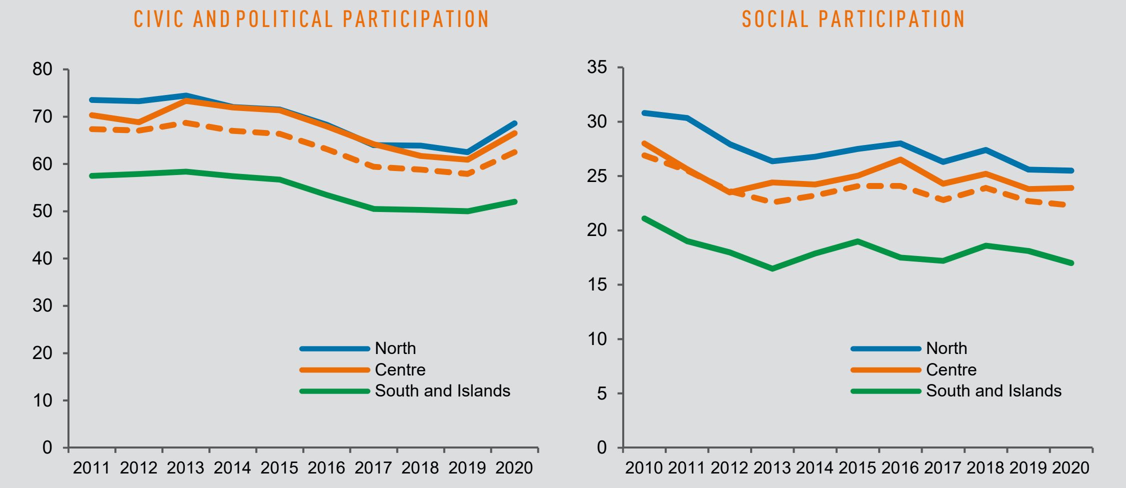


Source: Various - Consob
(a) Constitutional court, Magistrates' Governing Council (including magistrates who participate in the functioning of the Body) and some Independent Administrative Authorities (for Communications, Antitrust, Data protection), Consob, Italian embassies abroad.

After years of decline, civic and political participation is on the rise again

Over the decade, there has been a decline in the percentage of the population involved in activities such as talking about politics, getting informed, participating online, as well as in social participation activities. However, it is precisely in 2020 that political participation seems to be on the rise again, as a consequence of a strong need for information to follow the evolution of the COVID-19 regulations imposed at national and local level (Figure 18). This trend is more evident in the Centre and North of the country, while the South and Islands remain at lower levels. Moreover, the recovery is more marked among women, who partially make up for the wide gap with men.

Figure 18. Persons aged 14 and over carrying out activities of civic, political and social participation by geographic area. Years 2010-2020 (a). **Percentage values**

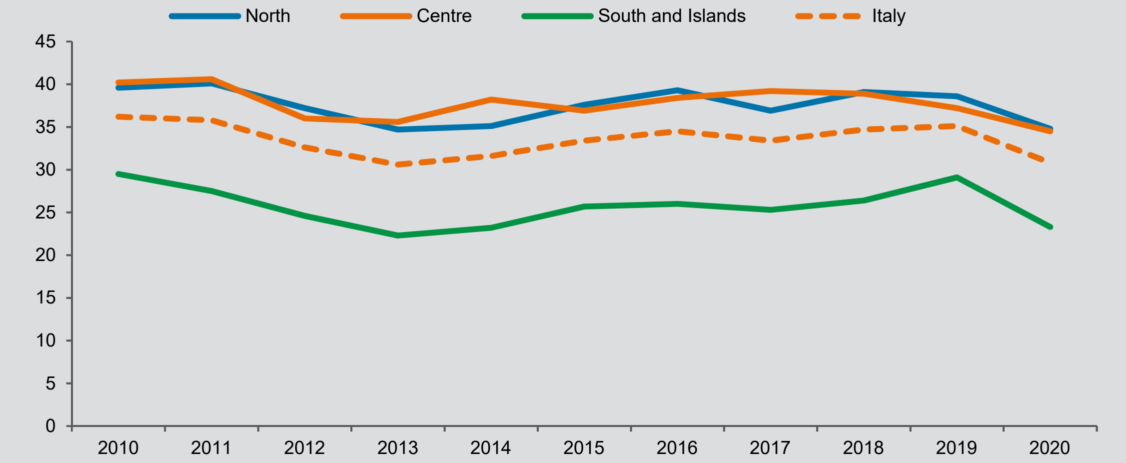


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Cultural participation was recovering before 2020

Since 2010, cultural participation activities outside the home has declined sharply, reaching 30.6% in 2013 and then showing an upward trend in all areas of the Country until 2019. In 2020, however, closures due to the measures to contrast the COVID-19 pandemic have marked a major setback, completely reversing the progress of recent years.
The net effect over the period is a decrease of 4.3 percentage points (from 35.1% to 30.8%), more pronounced in the South and Islands (-5.8 percentage points) (Figure 19).
During the decade, reading (at least 4 books per year and/or at least 3 printed or online newspapers per week) also recorded a decreasing trend, going from 44.4% in 2010 to 39.2% in 2020. However, in the last year there has been a slight recovery due to the increase in the share of people who read at least 4 books per year (from 22.3% to 23.7%).

Figure 19. Persons aged 6 and over who have carried out 2 or more cultural participation activities away from home in the 12 months before the interview. Years 2010-2020 (a). Percentage values



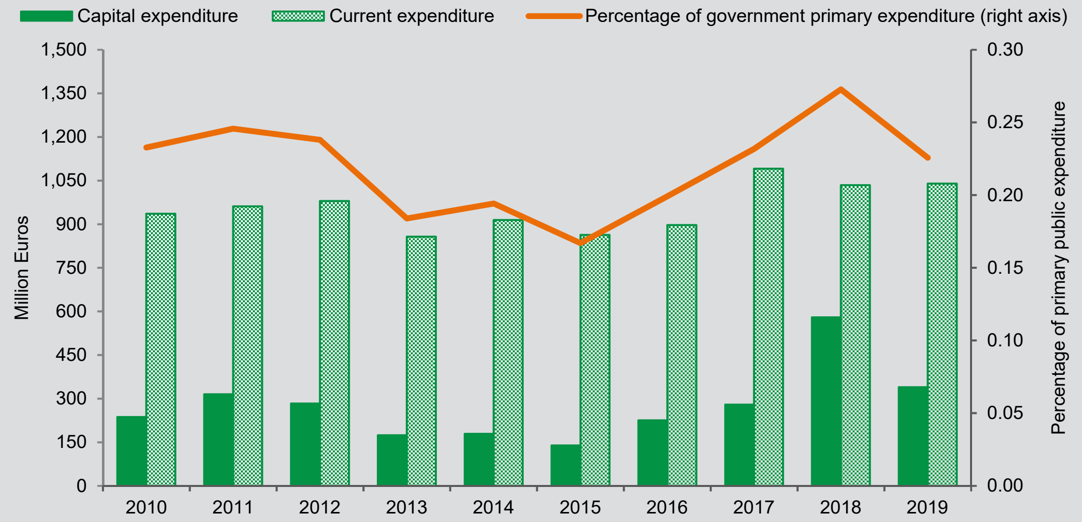
Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Inadequate and fewer investments in the conservation and protection of cultural heritage and activities

One of the fundamental key issues concerning the nation's cultural and landscaping heritage is the inadequacy of public spending on it. In 2019, public spending on conservation and protection of cultural and landscaping heritage amounted to 1,4 billion euros, net of repayments and financial liabilities, equal to 0.23% of primary public spending, down 14,6% after three years of growth[4] (Figure 20): a figure in sharp contrast with the vastness and importance of the nation's historical and artistic heritage.

4 Mission 021 of the State Budget (total payments by central government), not considering the programs "Support, development and protection of the performing arts sector" and "Support, development and protection of the live performing arts sector" (until 2016), "Support, development and protection of the film and audiovisual sector" (from 2017), "Promotion of the development of culture and knowledge of cultural heritage for young people" (so-called Bonus Cultura, 2016).
Expenditure for the protection and enhancement of cultural and landscape assets and activities (in the classification by missions of the General State Accounts Office) is not comparable with the sum of expenditure for Cultural services and Protection of biodiversity and landscape (in the classification by functions used for international comparisons). In addition, the international comparison the total expenditure of the entire public administration is considered and not only that of the state. Primary expenditure is net of the repayment of public debt.

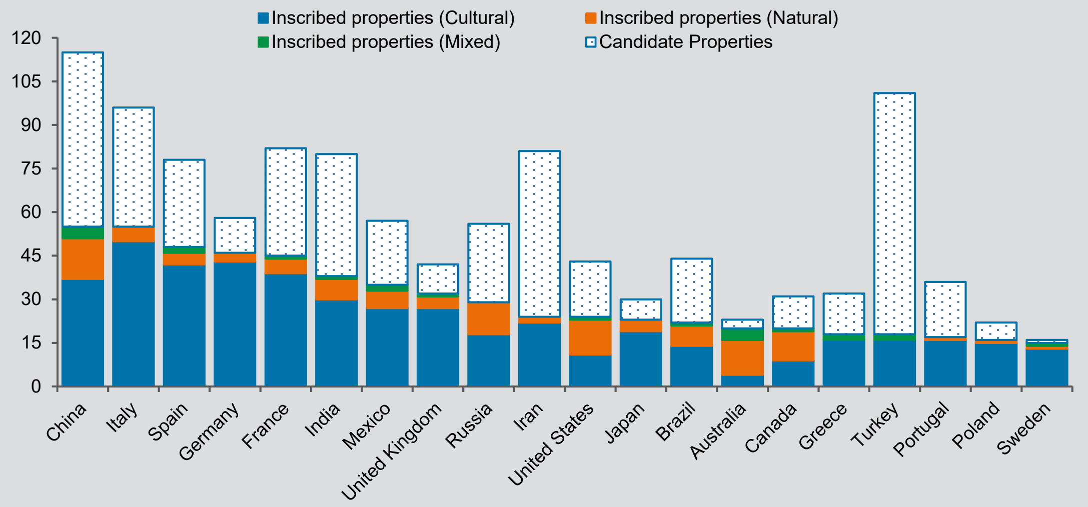
Figure 20. State expenditure on conservation and protection of cultural and landscaping heritage (a) **by item. Years 2010-2019. Millions of Euro and percentage values**



Source: Istat processing Ragioneria Generale'data
(a) Mission 021 of state budget (total payments of central government net of programs for financing entertainment and cd. Bonus cultura).

The importance of the national cultural patrimony is evident in Italy's ranking in Unesco's heritage list. As of 2019, Italy was, together with China, at first place for number of registered assets. More precisely, it had 55 assets, equal to 4.9% of the total[5], coming before Spain, Germany and France. Assets candidates for Unesco registration in Italy are 41[6] (see Figure 21).

Figure 21. Registered assets in Unesco's heritage list by selection criterion and candidates for registration by nation (first 20 nations per number of registered assets). Year 2020. Absolute values



Source: Istat, processing on Unesco data, World Heritage List e World Heritage Tentative Lists

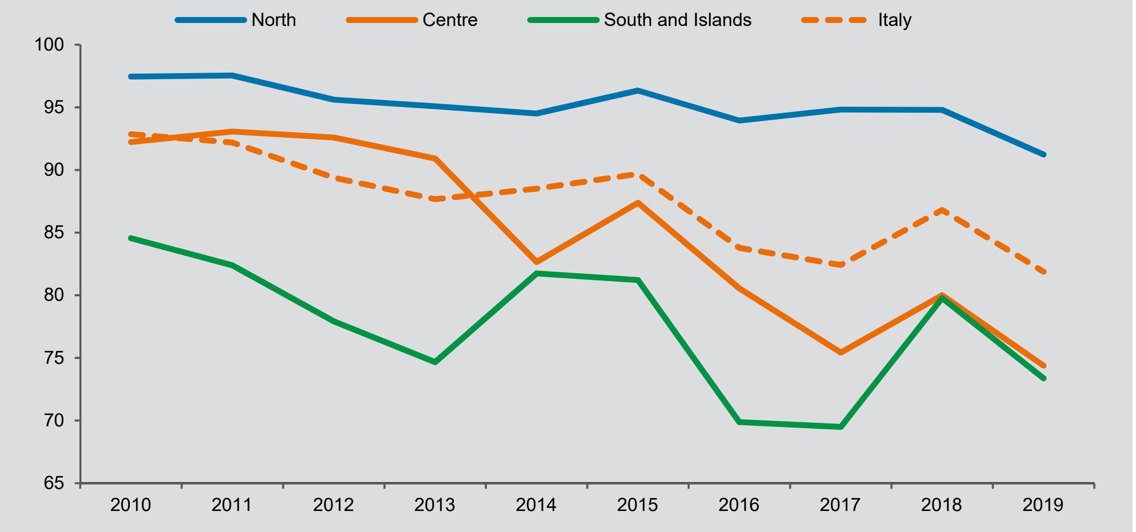
5 Including six transboundary properties; source: UNESCO, World Heritage List. There are 1,121 properties on the World Heritage List, of which 39 are transboundary, with ownership shared by two or more States (as of December 2020).

6 World Heritage properties are divided into cultural, natural and mixed. The 41 candidate properties are mostly cultural (28, including eight cultural landscapes), 11 natural and two mixed. Source: UNESCO, World Heritage Tentative Lists (as of December 2020).

Slow improvement in the air quality but levels remain critical. Marked progress on waste disposal

Environmental conditions play a key role in guaranteeing either directly or indirectly the wellbeing of society. Consider for example the debate over the relationship between the spread of COVID-19 and the quality of the environment. The set of Bes measures regarding these relationships captures a wide and articulated array of points of view, from the quality of air and water to the emission of climate changing gases to weather climatic events.
Water resources and air quality indicators go in opposite directions. Leakages in the local potable water distribution network rose from 32.1% in 2008 to 42% in 2018 with values particularly high in the South and Islands. On the other hand, air quality slightly improved thanks to fewer increases in the yearly average of $PM_{2.5}$, compared to WHO benchmark values (10ug/m^3) whose values in more than 80% of cases are yet still very high (from 92.9% in 2010 to 81.9% in 2019) (Figure 22). However, Italy has been fined several times by the European Commission for systematically and continuously exceeding the limits for PM_{10}, NO_2, and $PM_{2.5}$ set by the European directive 2008/50/CE.

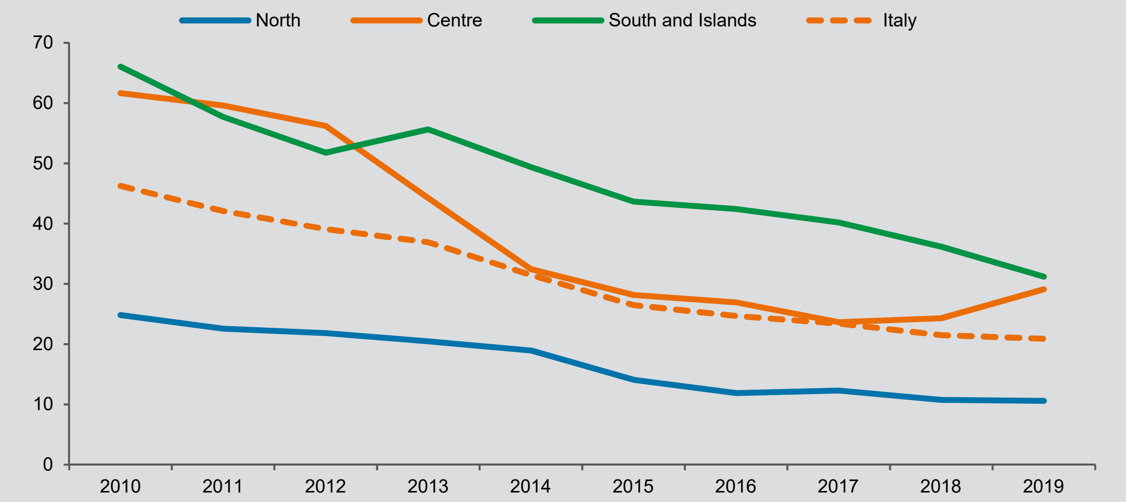
Figure 22. Exceedance of the $PM_{2.5}$ yearly average compared to WHO benchmark values (10/m^3) over the total measured by geographic area. Years 2010-2019. Percentage values



Source: Istat, Processing on data from Ispra

Improvements are registered in the waste management. The production of urban waste per resident goes from 548 kg in 2010 to 504 kg in 2019 and the share disposed of in landfill measured against the total amount of waste collected also decreases from 46.3% in 2010 to 20.9% in 2019. It must however be highlighted that Italy is still very far from the EU target which aims at disposing in a landfill by 2035 only 10% of collected urban waste (Figure 23).

Figure 23. Municipal waste sent to landfill by geographic area. Years 2010-2019. Percentage values



Source: Istat, Processing on data from Ispra

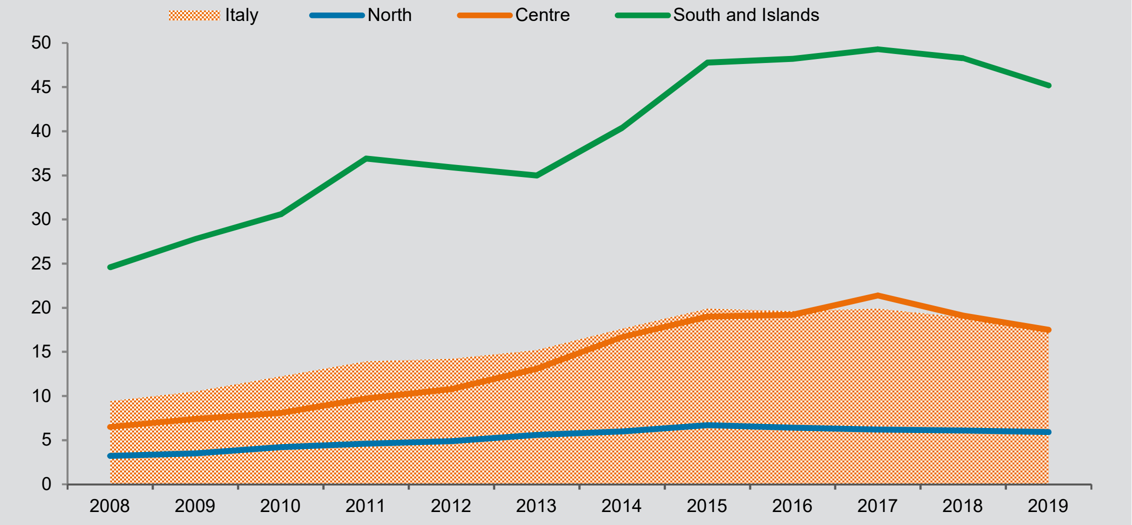
Increase in the soil sealing and illegal construction reaches alarming levels in the South and Islands

Consumption of impermeable soil increases from 6.98% in 2012 to 7.1% in 2019 thus causing an irreversible loss of natural areas and agricultural land. This phenomenon is also accompanied by an increase in illegal construction, which undermines civic consciousness, the effectiveness and efficiency of the authorities in protecting the land and the quality of life. In addition to this, it also leaves a nation vulnerable to seismic and hydrological danger at risk.

In 2019, illegal construction declined for two consecutive years but between 2015 and 2017, it had remained unaffected. This was partly due to the 2009 economic crisis and after a long period of growth (Figure 24). The crisis generated an unprecedented contraction in the building sector. However, it had a lighter impact on the illegal component, particularly in the more fragile geographic areas and those areas already affected by this phenomenon[7]. As a result, this further widened territorial divide: the illegal construction index rose from 3.2 to 5.9 (less than 3 points) in the North of the nation, from 6.5 to 17.5 (11 points) in the Centre and from 24.6 to 45.2 (20 points) in the South and Islands.

7 In 2007, on the eve of the economic crisis, the ratio was 9 unauthorised buildings every 100 authorised, and Italian municipalities were issuing around 250 thousand building permits for new buildings. By 2010, the number of permits had already more than halved, and in 2015 it reached a minimum of 43 thousand (over 80% less than in 2007). In the same period, however, the flow of unauthorised buildings is estimated to have fallen by around 40%: the dynamics of the unauthorised building index between 2007 and 2015 is therefore essentially explained by the collapse of legal building production.

Figure 24. Illegal building rate by geographic area. Years 2008-2019 (a)**. New illegal buildings every 100 legal**

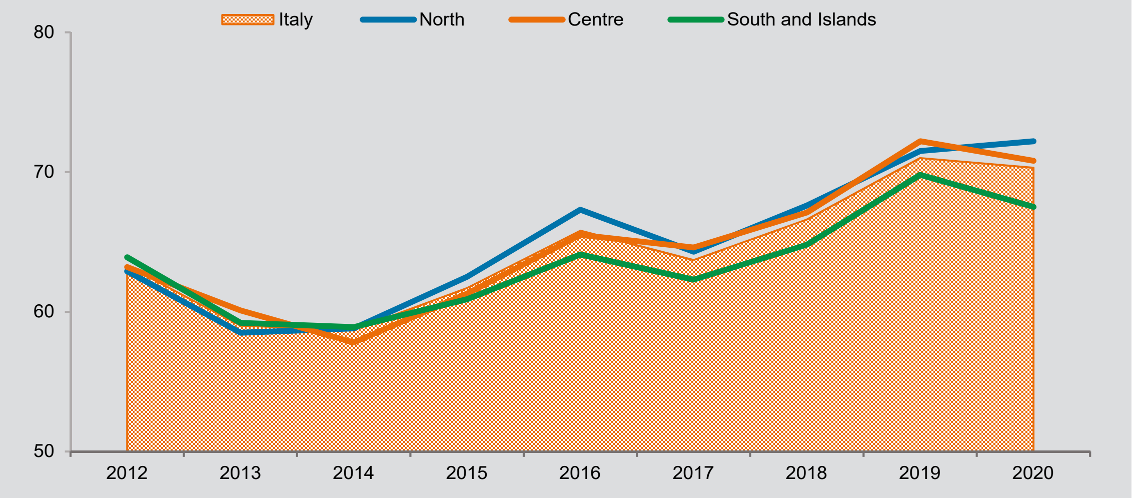


Source: Istat, Processing on data from Cresme
(a) 2019 data are provisional.

Increase in public awareness towards climate changes

Compared to the past, the subjective indicators point to an increased public awareness towards environmental issues. An increasing share of individuals 14 years old and over worry about issues such as the greenhouse effect and climate change: from 63.3% in 2012 to 71% in 2019 (Figure 25). The percentage of people who claim to be very or partly satisfied with the environmental situation in the area where they live (70.1% in 2020), after a constant growth beginning in 2012, comes to a halt in all areas and socio-demographic groups (by gender, age, level of education).

Figure 25. Concern for the increase in greenhouse effect and/or climate changes by geographic area and education. Years 2012-2020 (a)**. Values per 100 individuals aged 14 and over**

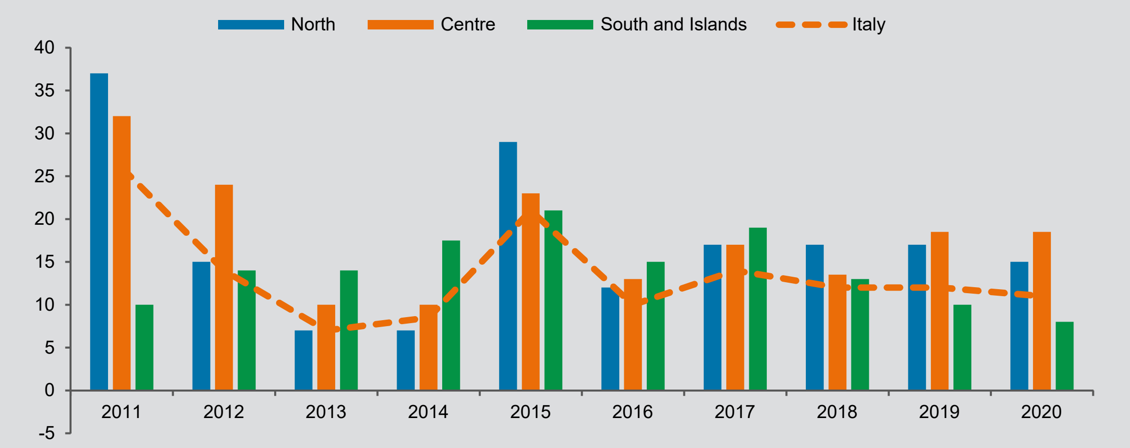


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Subjective perceptions of climate risks are driven by factors of objectivity

Extreme weather climatic events are on the rise in the nation. The intensity of hot days in the last ten years is always higher than the median of the reference period 1981-2010 (Figure 26). In addition to this, there have also been prolonged periods of insufficient rain which in some years caused a sharp reduction in the available water supply. For example, in 2017 there were serious problems in supplying water in several areas near Rome as a result of the drop in level of the Bracciano lake, one of the most important water reserves. On the other hand, there was an increase in the number of intense and localised precipitations that were often associated with natural disasters caused by floods and landslides.
At the same time, the Italian economy reduced carbon dioxide emissions and other climate altering gases (tons of CO_2 equivalent per resident) – from 8.8 in 2010 to 7.1 in 2019. Consumption of internal material dropped by 30% between 2010 and 2018. A positive milestone concerns the consumption of energy from renewable sources, which already in 2012 had exceeded the target of 26.4% of internal consumption set for 2020.

Figure 26. Duration index of hot periods (WSDI): deviations from the climatic median (reference period 1981-2010) by geographic area. Years 2011-2020

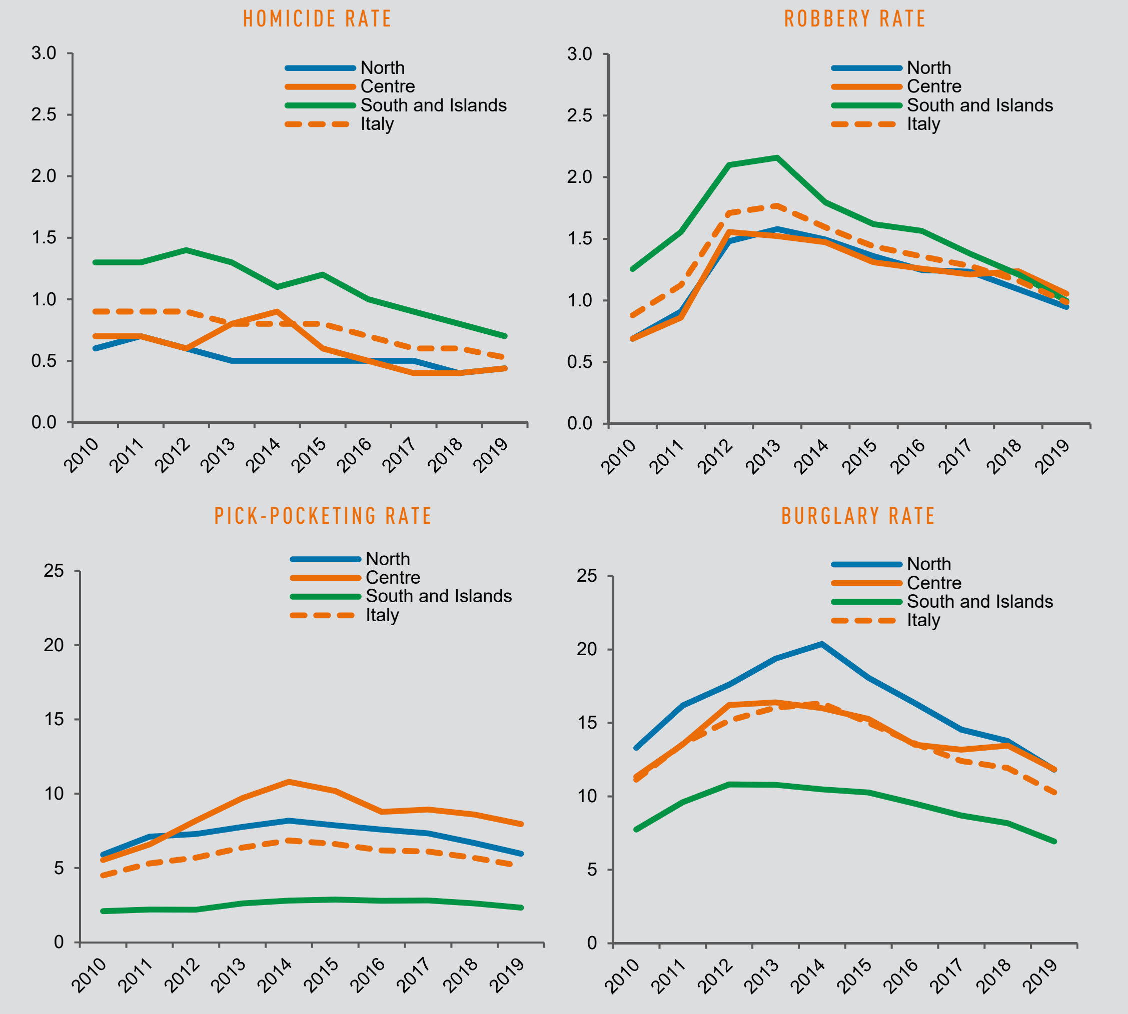


Source: Istat-Crea, processing on data from Copernicus - European Union's Earth Observation Programme

After rising during the economic crisis, predatory crime has fallen in recent years

Between 2010 and 2014, predatory crime increased as a result of the effects of the crisis: residential burglaries peaked in 2014 (16.3 victims per 1,000 households compared to 11.1 in 2010), as did pickpocketing (6.9 victims per 1,000 inhabitants, compared to 4.5 in 2010), while robberies recorded their highest value in 2013 with 1.8 victims per 1,000 inhabitants, double than in 2010. Since 2015, all crimes have shown a downward trend and in 2019 the rate of burglaries was below the level recorded in 2010, while pickpocketing and robbery rates, while having recovered a lot, still have not returned to pre-crisis levels (Figure 27). Over the last decade, homicides have declined, mainly those affecting male victims (from 1.29 men killed per 100,000 inhabitants in 2010 to 0.70 in 2019), thanks to the decrease in homicides caused by mafia-type organised crime. Homicide rate of women has shown only a slight downward trend (from 0.52 women killed per 100,000 inhabitants in 2010 to 0.36 in 2019).

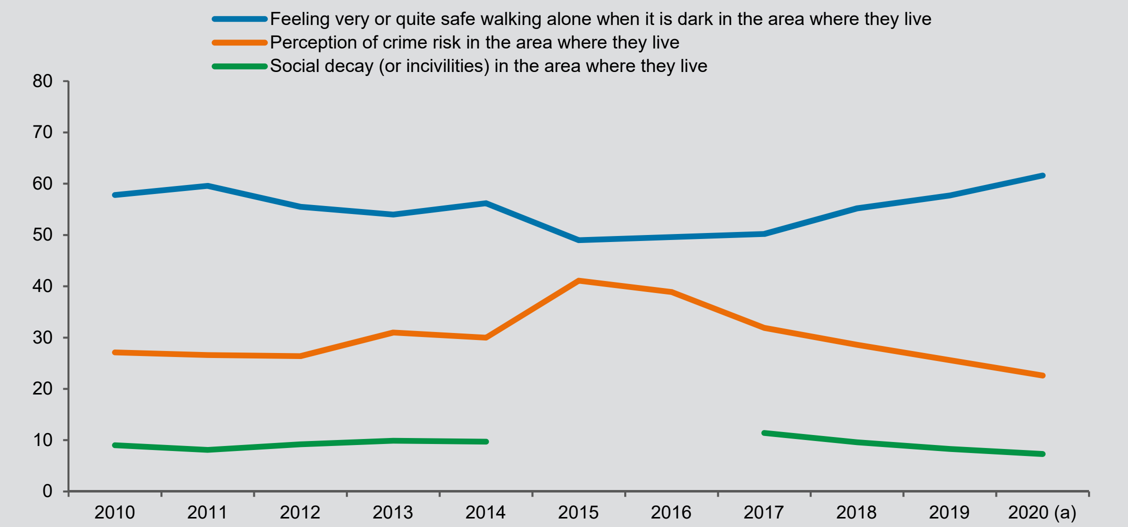
Figure 27. Homicide rate, burglary, pick-pocketing and robbery rate by geographic area. Years 2010-2019. Victims of homicide per 100,000 inhabitants, victims of pick-pocketing and robbery per 1,000 inhabitants, victims of burglary per 1,000 households



Source: For homicides, Ministry of the Interior; for burglary, pick-pocketing and robbery, Istat, processing of data on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey

The population's perception of safety shows, in accordance with crime data, an overall positive trend. All indicators of perception of safety referring to the area in which one lives are improving, the perception of safety when walking alone in the dark is increasing and the perception of social and environmental decay and the risk of crime in the area where people live is decreasing. The most significant improvements in these indicators are found in the municipalities in the centre and on the outskirts of the metropolitan areas, and thus in the areas that have always recorded the most critical levels (Figure 28).

Figure 28. Perception of safety in the area where people live: people aged 14 and over feeling very or quite unsafe 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 2010-2020 (a). **Per 100 persons aged 14 and over or per 100 households**



Source: Istat, survey on Aspects of daily life
(a) 2020 data are provisional.

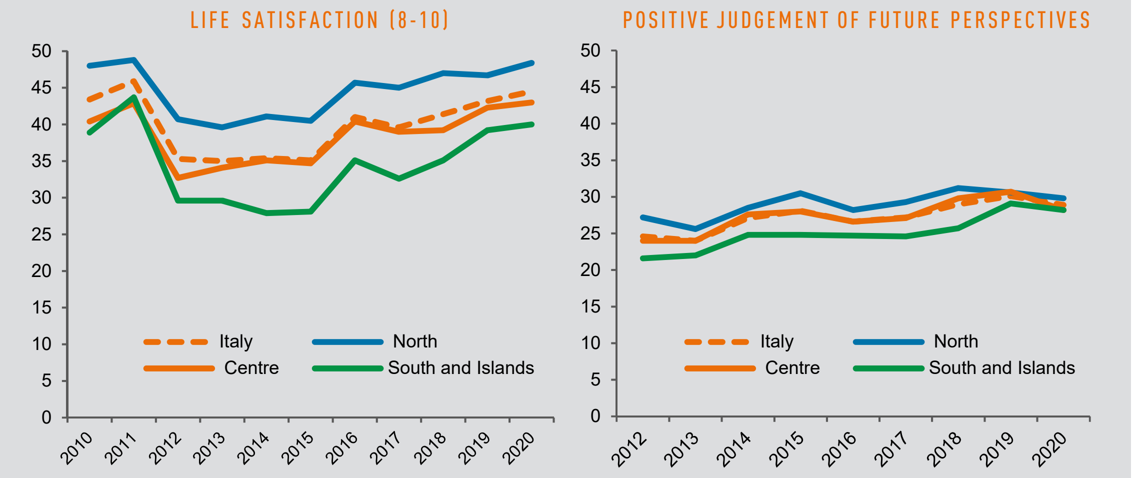
The share of people who are very satisfied with life as a whole is recovering after the economic crisis, but still at low levels

How do objective indicators translate into subjective assessments of well-being? The statistics of the last ten years show an initial phase of decline in overall satisfaction with life, followed by a period of growth that has brought the indicator back to levels similar to those at the beginning of the period. In fact, it should be remembered that right at the beginning of the decade our country found itself facing a serious financial crisis that halted the first timid signs of recovery from the 2008-2009 recession: employment and disposable income grew in 2011, albeit modestly, but fell again the following year. The effects on people's satisfaction with their economic situation were then intense and, although satisfaction with the other domains (leisure, health, relations with family and friends) did not decrease, the share of people who were very satisfied in general with their lives, already low, fell by as much as 10 points, only to rise again in 2016. In the year the pandemic began, despite the virus' particularly severe impact on the economy, satisfaction with life did not decline.

Growing concern about the future situation

The complexity of the economic scenarios and the high level of uncertainty triggered by the COVID-19 can be clearly seen in the indicators on expectations. Over the ten-year period, the share of those who believe their situation will improve over the next five years moves in line with, and sometimes ahead of, overall life satisfaction (Figure 29). In 2020, the two indicators move in opposite directions. As was the case in 2016, expectations may anticipate negative developments in subjective well-being.

Figure 29. People aged 14 and over who expressed a high score (8-10) of life satisfaction (over a 0 to 10 scale) and people aged 14 and over who think their situation will get better in the next 5 years by geographic area. Years 2010-2020 (a). **Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

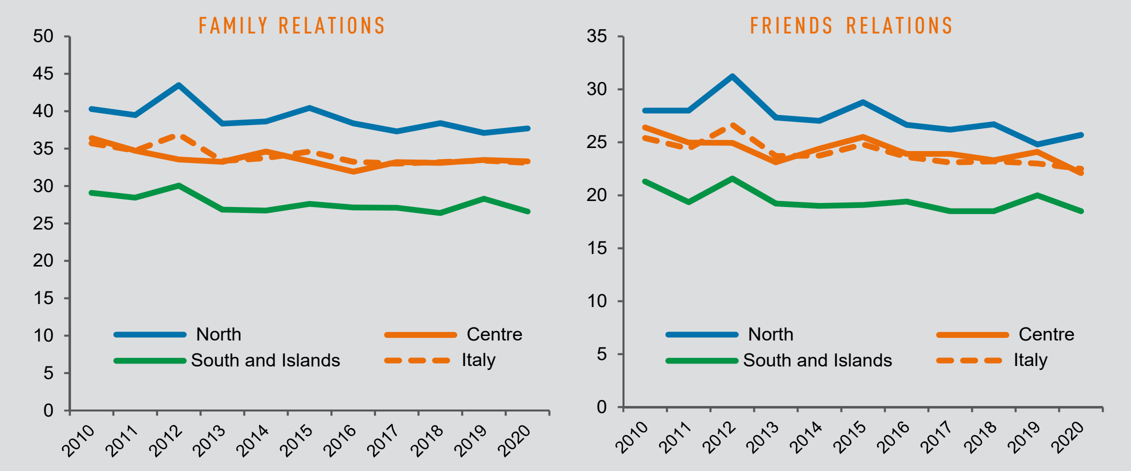
These trends can be interpreted as the result of a radical change in the calibre of perceptions regarding the present and forecasts for the future. The dramatic nature of the events has led people to no longer take the quality of their situations for granted and therefore to emphasise their appreciation of them[8]. However, this could be a shock effect, which is not necessarily destined to last and be reflected in the indicators of the years to come. At the same time, the unpredictability of an event of this magnitude has increased uncertainty and fear of the future. Analyses tell us that the interaction between subjective well-being and satisfaction with individual areas of life is complex. Positive assessments of health do, however, weigh heavily, and it is possible that sensitivity to this dimension, as to the economic one, will be amplified in the coming years.
It should be noted that the ten-year assessment of general satisfaction shows a relative improvement for the South and Islands compared with the 2010 values, even if the share of people who declare themselves very satisfied continues to be much lower (over 8 points) than for the rest of the country. During the economic and financial crisis of the last decade, the worsening for the regions of the South and Islands was more evident, but in recent years the repositioning towards the high satisfaction scores has been more marked in this macro-area, presumably driven by the launch of new policies to combat poverty. At the same time the percentage of those who expect a future improvement has grown relatively more in this area. The reduction in the share of "optimists" in 2020 is in line with that of the North and much smaller than that recorded in the Centre.
On the whole, however, life satisfaction in Italy remains unequal not only between regions but also by educational qualifications, age groups and, albeit to a lesser extent, between men and women.

8 Michalos defines, with the Multiple Discrepancies theory, life satisfaction as a function of personal living conditions (age, income, social networks) and 7 objective discrepancies: the discrepancy between what one has and what one wants; the discrepancy between what one has and what others have; the discrepancy between what one has and what one had best in the past; the discrepancy between what one has and what one expected to get; the discrepancy between what one has and what one expects to get in the future; the discrepancy between what one has and what one believes to deserve; the discrepancy between what one has and what one needs (Michalos, A. C. (1985). Multiple discrepancies theory (MDT). Social Indicators Research, 16, 37-413).

High and stable levels of satisfaction with family and friends relationships

Satisfaction with family and friends relationships, on the other hand, bucked the trend in 2020. In crises, satisfaction with family and friends generally increases, while satisfaction with one's own economic situation decreases. This is what happened, for example, in 2012 when there was a peak of the very satisfied in the North and in the South and Islands(Figure 30). Since then, satisfaction with family and friends has tended to be fairly stable, remaining at high levels: 33.1% and 22.5% declared themselves very satisfied, respectively, in the two relational spheres. In 2020, the evaluations for this sphere did not improve but, contrary to what could have been expected, given the period of forced distancing and the difficulties of daily life imposed by the pandemic, the network of relationships nevertheless held up.

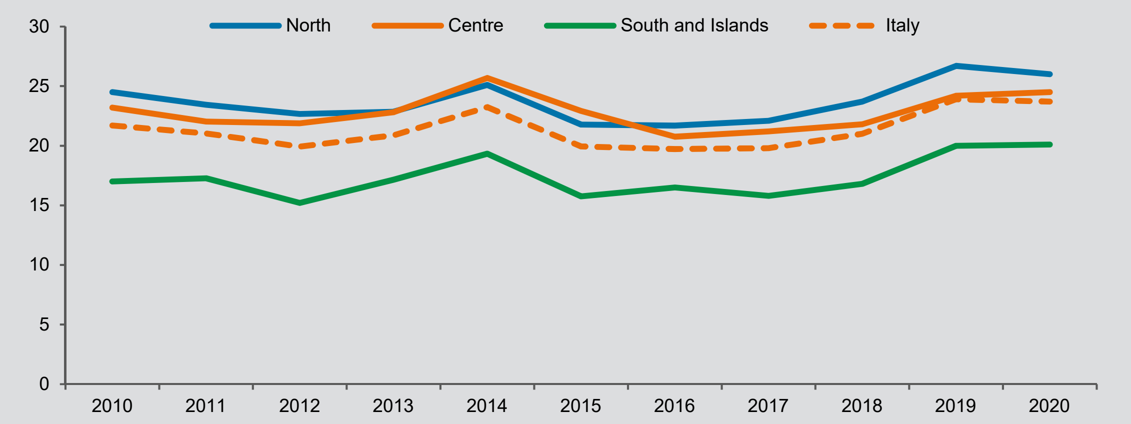
Figure 30. People aged 14 and over that are very satisfied with family and friends relations by geographic area. Years 2010-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The same applies to the indicator measuring trust (Figure 31): recovering in recent years, after the drop that followed the peak in 2014, it was stable in the year of the pandemic.

Figure 31. People aged 14 and over that feel that most people are worthy of trust by geographic area. Years 2010-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

1. Health[1]

Health is an important dimension that underlies individual and collective well-being. The achievement, by all populations, of the highest possible level of health is one of the goals specified by the WHO, as well as by our Constitution, which defines health as a fundamental right of the individual and an interest of the community.

Our Country has been characterised by a continuous improvement in health conditions, with a progressive increase in longevity; over time, in the European context, Italy remains one of the countries with the highest life expectancy at birth. Continuous improvements have concerned all phases of life, from the reduction in infant mortality to the consistent progress in adulthood and old age, marked also by the positive evolution of avoidable mortality and increases in the quality of survival in old age. Finally, the diffusion of healthier lifestyles among citizens has widened, in particular with the reduction of sedentariness.

During the 2020s, however, the global spread of the SARS-CoV-2 coronavirus pandemic was, and still is, one of the most important health threats of recent decades. The pandemic has violently affected the elderly and the most fragile in particular, while exacerbating the social inequalities that afflict our Country, as evidenced by the social differentials found in the excess mortality caused by COVID-19. It is important to consider that, in order to limit contagions, exceptional measures were imposed and they most likely reduced the risk of excess mortality in 2020, which therefore could have been even higher of what unfortunately already recorded.

The territorial distribution of COVID-19 deaths changes between the first and second wave: predominantly in the North during the first wave, in most of the Country during the second wave

The scenario of the spread of the COVID-19 pandemic in our Country can be summarised in three phases[2]. The first, comprising the period from February to the end of May 2020 (first wave), was characterised by a very rapid spread of infections and deaths and a strong territorial concentration, mainly in the North of the Country. In the summer season, from June to mid-September (transition phase), the spread of new cases was initially very limited, but by the end of September an increasing number of outbreaks were identified throughout the Country. From the end of September (second wave), cases increased at an exponential rate in most of the Country and only from mid-November a decrease in the incidence of infection was observed; deaths followed a similar trend but delayed by about two weeks.

Between February and the end of November 2020, 1 million 651 thousand 229 positive cases of COVID-19 were diagnosed by Regional Reference Laboratories and reported to the National Integrated Surveillance System of the Italian National Institute of Health by the 20th

1 This chapter was edited by Emanuela Bologna, with contributions from: Silvia Bruzzone, Luisa Frova, Lidia Gargiulo, Anita Guelfi, Marilena Pappagallo, Sabrina Prati, Silvia Simeoni, Valentina Talucci, Alessandra Tinto.

2 Impact of the COVID-19 pandemic on total mortality in the resident population. https://www.istat.it/it/archivio/252168 (in Italian).

of December 2020. During the same period, 57 thousand 647 deaths were recorded among COVID-19 positive persons.

In both first and second waves, the rate of deaths under the age of fifty remained almost unchanged at around 1% for both genders. The over-80s age group had the highest percentage of deaths due to COVID-19 (60% of total deaths), the 70-79 age group accounted for a quarter of COVID-19 deaths, while the 60-69 age group accounted for 10%. Lombardia alone, with over 22,500 deaths, accounted for 40% of the total number of deaths due to COVID-19 (Table 1).

Table 1. Percentage incidence of COVID-19 deaths on total COVID-19 deaths in Italy, by region, geographic area and age groups. First and second wave

Regions and geographic areas	First wave					Second wave				
	<60	60-69	70-79	80+	Total	<60	60-69	70-79	80+	Total
Piemonte	4.2	8.3	23.5	64.0	**11.8**	3.5	7.1	24.2	65.2	**7.1**
Valle d'Aosta	3.5	7.0	24.6	64.8	**0.4**	1.2	5.3	17.5	76.0	**0.8**
Lombardia	4.6	11.3	29.3	54.7	**47.5**	3.3	6.6	22.2	67.9	**26.7**
P.a. Bolzano	2.1	7.3	17.8	72.7	**0.8**	1.8	4.0	19.9	74.3	**1.3**
P.a.Trento	2.7	6.0	20.6	70.6	**1.2**	2.1	3.3	17.6	77.0	**1.1**
Veneto	3.4	6.7	19.6	70.4	**5.7**	2.6	6.4	19.5	71.5	**8.6**
Friuli-Venezia Giulia	1.7	5.2	23.2	69.9	**1.0**	2.7	5.6	19.6	72.1	**2.4**
Liguria	3.2	8.7	24.2	63.9	**4.3**	2.9	7.8	22.5	66.8	**3.8**
Emilia-Romagna	3.5	9.1	25.2	62.2	**12.4**	2.5	6.0	17.5	74.0	**7.5**
Toscana	4.7	7.5	22.3	65.6	**3.1**	1.9	6.9	19.2	72.0	**6.4**
Umbria	6.6	11.8	28.9	52.6	**0.2**	2.1	6.5	27.1	64.3	**1.6**
Marche	4.8	9.8	24.0	61.4	**2.9**	4.1	4.1	28.7	63.1	**0.9**
Lazio	8.2	10.1	25.4	56.2	**2.3**	7.6	15.8	24.2	52.4	**6.8**
Abruzzo	5.4	15.4	23.1	56.1	**1.3**	2.8	8.3	25.3	63.6	**2.2**
Molise	3.7	18.5	7.4	70.4	**0.1**	1.9	11.7	14.6	71.8	**0.5**
Campania	14.7	17.9	30.1	37.3	**1.5**	10.4	17.7	35.0	36.9	**8.1**
Puglia	7.8	9.9	24.9	57.4	**1.6**	6.9	13.5	27.8	51.8	**5.0**
Basilicata	11.4	14.3	42.9	31.4	**0.1**	4.4	14.0	26.3	55.3	**0.5**
Calabria	6.3	16.4	23.4	53.9	**0.4**	4.4	18.9	26.4	50.3	**0.8**
Sicilia	8.8	10.9	27.8	52.6	**1.0**	7.0	14.1	28.8	50.0	**6.3**
Sardegna	5.6	10.5	18.9	65.0	**0.4**	7.0	15.3	25.5	52.2	**1.5**
North	4.2	9.9	26.7	59.2	**85.2**	3.0	6.4	21.2	69.4	**59.4**
Centre	5.7	9.1	23.9	61.2	**8.5**	4.5	10.5	22.8	62.2	**15.7**
South and Islands	8.9	13.7	25.8	51.7	**6.3**	7.5	14.8	29.7	48.0	**24.9**
Italy	**4.6**	**10.1**	**26.4**	**58.9**	**100.0**	**4.4**	**9.2**	**23.5**	**62.9**	**100.0**

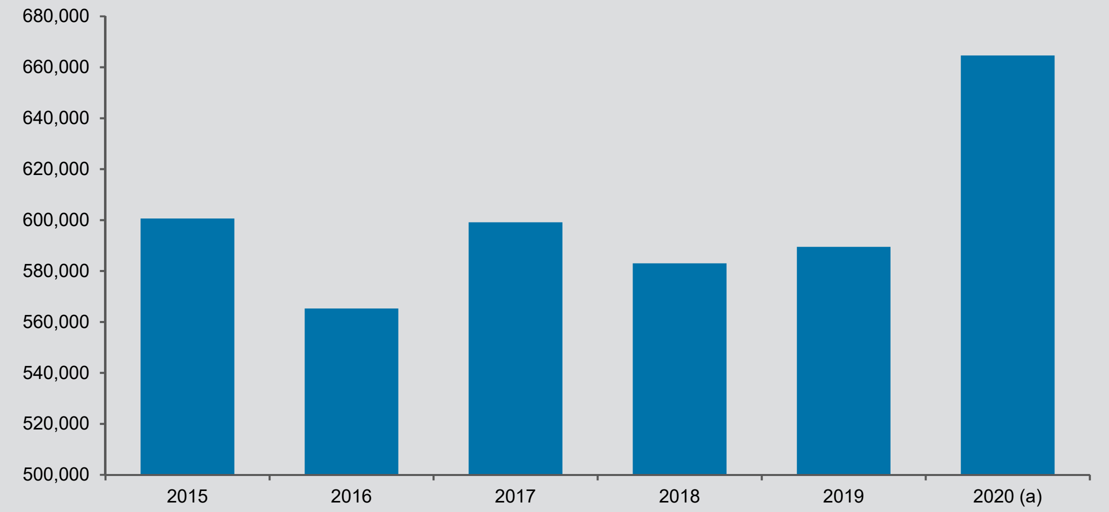
Source: COVID-19 Integrated Surveillance Service, Iss

Between the first and second waves, the distribution of COVID-19 deaths in the territory changes considerably. In the months of February-May, COVID-19 deaths are mainly concentrated in the North of the Country (85%), falling to 8% in the Centre and 6% in the South and Islands. In the months of October and November, instead, the pandemic also affected the rest of Italy, with a significant increase in deaths in the central-southern regions (41% of the total number of COVID-19 deaths in Italy in the same period).

From the end of February to November, COVID-19 deaths accounted for 9.5% of total deaths in the period; during the first pandemic wave (February-May) this share was 13%, while in the second wave the overall contribution of COVID-19 deaths rose to 16% at the national level (with a considerable increase in November). Looking at the contributions of COVID-19 deaths to overall mortality by age group, at the national level, COVID-19 mortality

contributed 4% of overall mortality in the 0-49 age group, 8% in the 50-64 age group, 11% in the 65-79 age group, and 8% among those aged 80 years or older.
Excess mortality, compared with the previous 5 years, in Lombardia and Emilia-Romagna is lower in the second wave, while in Veneto, Valle d'Aosta and Piemonte it is higher. Excess mortality is an important indicator of the overall impact of the pandemic, not only taking into account deaths directly attributed to COVID-19, but also those that may have escaped the surveillance system because they were undiagnosed or deaths indirectly related to the pandemic, such as deaths caused by delayed or missed treatment due to an overburdened healthcare system.

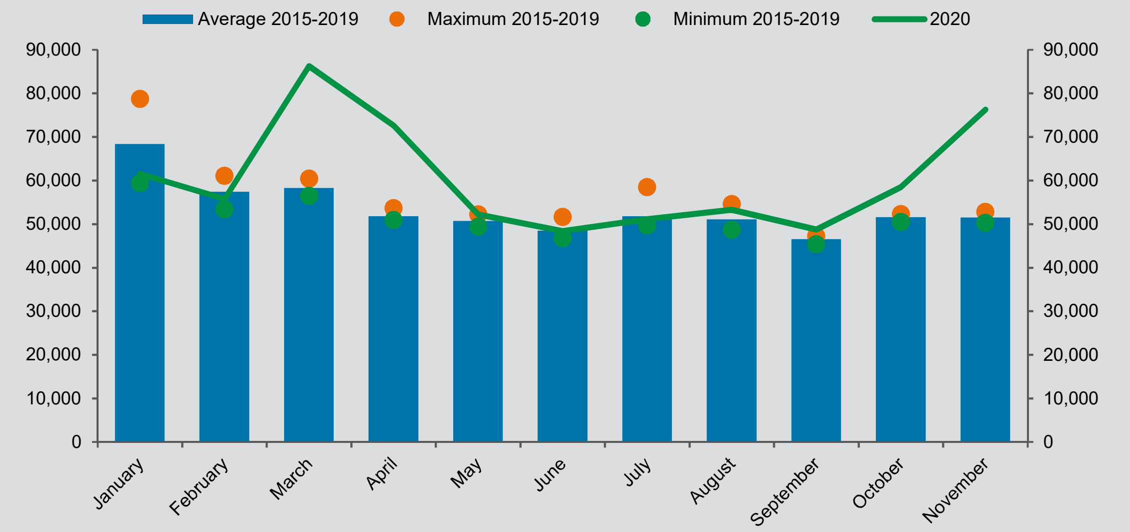
Figure 1. Number of deaths occurring between January 1 and November 30. Years 2015-2020 (a)



Source: Istat, Integrated Municipal Daily Mortality Database
(a) Data for November 2020 are estimated.

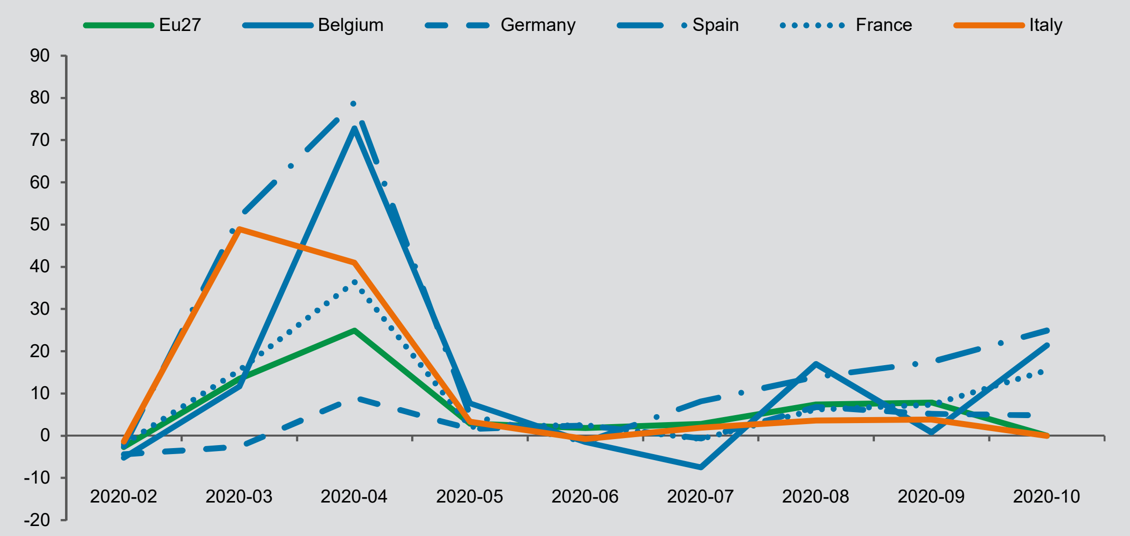
Excess mortality was estimated by comparing, for the same period, 2020 data with the average number of deaths in the previous five-year period (2015-2019). Nearly 84 thousand more deaths are estimated in February-November 2020 comparing to the February-November 2015-2019 average. Deaths of COVID-19 positive persons recorded by the Integrated Surveillance referring to the same period represent 69% of the total excess mortality.
Since the end of February 2020, a clear change was observed with respect to the favourable trend in mortality that had characterised the 2019-2020 winter season; in the first two months of the year, in fact, few deaths had been recorded compared with the average of the previous five years (Figure 2). In March and April, however, at the same time as the first wave of spread of the COVID-19 outbreak, there was a major increase in deaths from all causes compared to the expected level based on the 2015-2019 average, with COVID-19 deaths accounting for 61.5% of the excess mortality.
An excess of deaths from all causes, although with variable intensity and cadence, was highlighted in many other European countries at the time of the first pandemic wave (Figure 3). Italy is one of the countries that suffered most from the impact of the COVID-19 pandemic in terms of mortality. Among European countries, Spain and Belgium were also particularly affected.

Figure 2. Mortality by month and comparison with same month data over 2015-2019. Year 2020 (a)**. Absolute values**



Source: Istat, Integrated Municipal Daily Mortality Database
(a) Data for November 2020 are estimates.

Figure 3. Excess of mortality per month in some European countries and the Eu27 average compared with the monthly average of deaths. Years 2016-2019. Percentage values

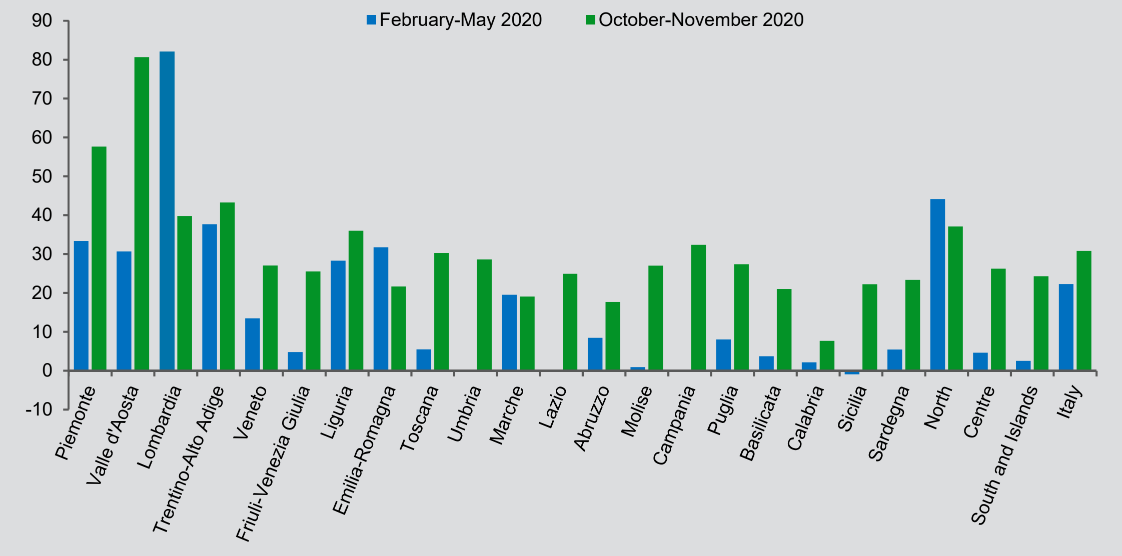


Source: Istat, Elaboration on Eurostat data

During the first phase of the pandemic, there were more than 211 thousand deaths (March to May 2020), 50 thousand more than the average for the same period in 2015-2019, of which more than 45 thousand related to residents in the North of the Country (Figure 4).
The increase in deaths in the Northern regions resulted in almost a doubling of deaths in March (+94.5% compared to the average for the same month in 2015- 2019) and a 75% increase in April.
In the June-September period, corresponding with the transitional phase of the spread of the pandemic, a reduction in total mortality was observed, bringing in all regions the number of deaths from all causes recorded in 2020 in line with the reference values of the 2015-2019 period. Conversely, beginning in mid-October 2020, the effects of the second wave of

the pandemic on all-cause mortality become gradually more apparent. In absolute terms, an increase in all-cause deaths of more than 31 thousand and 700 is estimated for October and November 2020 compared to the same months in the period 2015-2019, in the same period deaths of COVID-19 positive individuals are about 21 thousand and account for 67% of the excess mortality.

Figure 4. Excess of total deaths in the first and second pandemic waves by region and geographic area. Year 2020 (a). **Percentage change in deaths from all causes** (b)



Source: Istat. Integrated municipal daily mortality database
(a) Data for November 2020 are estimates.
(b) For February-May and October-November 2020 compared to the average for the same period in 2015-2019.

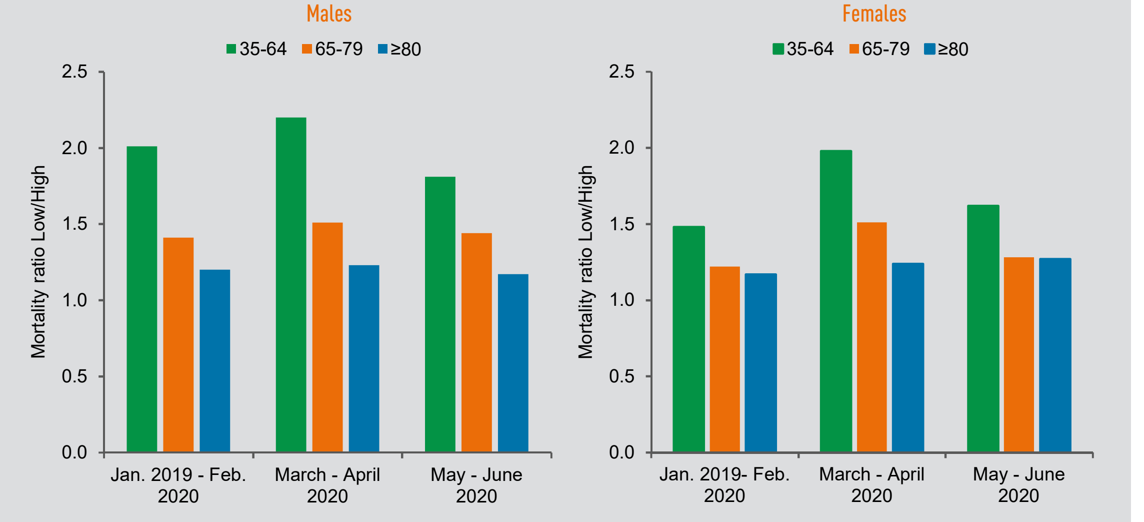
The second wave was characterised in October by an excess of total deaths of 13% found both in North and Centre-South, while in November there was again an excess of mortality higher in the North (+61.4%), compared with the Centre (+39.3) and the South and Islands (+34.7%). In many northern regions, moreover, the total excess of mortality in November exceeds that of the March-April peak: this occurs in Valle d'Aosta (+139% compared to +71% in April), in Piemonte (+98% compared to +77% in April), in Veneto (+42.8% compared to +30.8% in April) and in Friuli-Venezia Giulia (+46.9% compared to +21.1%). In other regions, the increase in deaths recorded in November was lower than in the first wave: these regions were Lombardia (+66% in November compared with +192% in March and +118% in April) and Emilia-Romagna (+34.5% compared with +69% in March).
The excess of about 50 thousand deaths from all causes found nationally for the period March-May 2020, compared to the average for the same period in the years 2015-2019, is due for 72% to the increase in deaths in the population aged 80 years and over (36 thousand and 400 deaths more). The increase in mortality in the 65-79 age group explains another 23% of the excess of deaths in correspondence with the first wave of the pandemic; in absolute terms, the increase compared to the average value of 2015-2019 is 11 thousand and 700 deaths (which in total, in this age group, amount to just under 53 thousand).
In the months of October and November, a similar pattern is observed: the overall increase in deaths exceeds 31 thousand and 700, including more than 23 thousand more deaths among those aged 80 years and over (which covers 74% of the increase in total deaths in the two-month period). Regarding the 0-49 age group, for almost the whole period

considered, monthly deaths in 2020 are lower than the 2015-2019 average, with the exception of the March and November data referring to men resident in the North, for which an increase of 11% and 4.9% is observed, respectively. The fact that the mortality of the younger population is in 2020 generally lower than the 2015-2019 average period can be explained by considering both, the lower lethality of the pandemic under the age of 50 and the reduction in mortality from some of the main causes affecting this segment of the population such as accidental ones, due to the lockdown and the consequent block of mobility and of many productive activities.

In the pandemic period, the mortality gap between the least and the most educated has widened further

In Italy, as well as in all European countries, those who are lower in skills and resources are more likely to fall ill and have, on average, a lower life expectancy. Overall, Italians show less social inequality in mortality than the rest of European countries, thanks to the protection of the Mediterranean diet, the family network and a universalistic healthcare system.
However, Istat mortality data by level of education show, in the pre-pandemic period, significant inequalities to the disadvantage of less educated people. The social inequalities in mortality are greater among men and in the central segments of life (where mortality can be defined as 'avoidable').
Analysing mortality by different levels of education, the mortality gap between the least and most educated, which was already observed in 2019, widened further in correspondence with the first wave of the pandemic; the mechanisms that expose people to the risk of death have, in fact, acted with greater virulence on population with low levels of education.

Figure 5. Social inequalities in mortality by level of education, age, gender, and period (pre-pandemic and pandemic). Areas of high prevalence during the first wave of the pandemic. Years 2019 and 2020. Ratio of mortality rates in low- and highly-educated populations (a)



Source: Istat, Basic Registry of Individuals (BRI) and follow-up mortality data from the Population Registry and Tax Registry, January 2019-June 2020
(a) Cohort includes individuals enrolled in the BRI at January 1, 2019, aged 35 or older, resident in municipalities with validated mortality data (7,357 out of 7,904 municipalities, representing 95% of Italian residents).

In particular, social inequalities for mortality are found to have increased especially in middle-age groups and among women. Analysis by age in high-pandemic areas shows greater inequality in working-age individuals than in older ones and an increase in the mortality ratio, in the first pandemic wave, among women aged 35-64 (from 1.5 to 2) and 65-79 (from 1.2 to 1.5) (Figure 5). On the contrary, no substantial changes are observed among men and women over 80 years of age. In May and June, social inequalities in mortality were at similar levels to the previous year.

Survival and quality of years lived: the gains lost during the pandemic

Italy remains one of the countries with the highest life expectancy in the international context. With respect to the most recent Eurostat data on life expectancy at birth updated in 2019[3], our Country was once again confirmed in second place among the 27 European Union countries, with 83.6 years, after Spain (84 years) and with +2.3 years of advantage compared to the Eu27 average (81.3 years). Significant confirmation among males: in 2019, Italy, together with Sweden, was at the top of the ranking of countries for average life expectancy at birth (81.4 in Italy and 81.5 in Sweden, respectively), the highest levels ever recorded in Italy and the European Union.

Due to the COVID-19 pandemic, that has significantly affected Italy, characterised by a demographic structure that is much older than that of other countries, the estimates made[4] on life expectancy for 2020 suggest an abrupt interruption and a significant inversion of the trend in the process of constant improvement in longevity observed in recent years; especially in some areas of the Country that were particularly affected by the spread of the virus.

At the national level it is estimated that about 0.9 years of life expectancy at birth will be lost in only one year (from 83.2[5] to 82.3 years in 2020), but a strong heterogeneity emerges between the different territories, with a more marked loss, in terms of years lived, in the northern regions (from 83.6 to 82.1 expected years), compared to the Centre (from 83.6 to 83.1) and the South and Islands (from 82.5 to 82.2) (Figure 6).

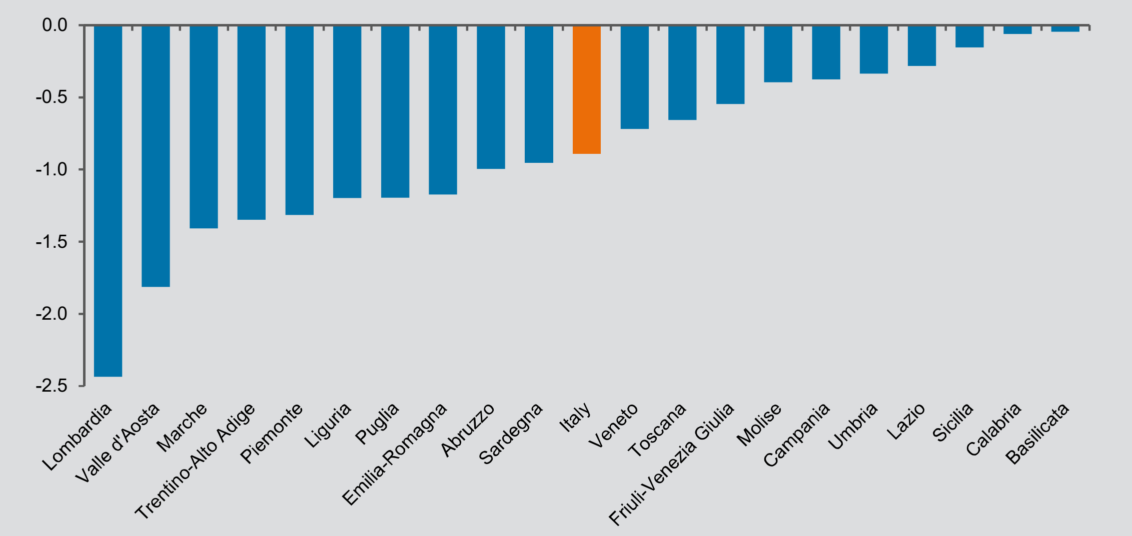
In particular, looking at the specific regions, in 2020 the strongest drop in life expectancy at birth is recorded in Lombardia, where the mortality recorded during the year would cause a loss of approximately 2.4 years (from 83.7 to 81.2), followed, in decreasing order, by Valle d'Aosta (-1.8 years; from 82.7 to 80.9), Marche (-1.4 years; from 84 to 82.6), Piemonte (-1.3 years; from 82.9 to 81.6) and Trentino-Alto Adige (-1.3 years; from 84.1 to 82.8). Reductions of more than one year would also be recorded in Liguria (-1.2 years; from 83.1 to 81.9), Puglia (-1.2 years; from 83.3 to 82.1) and Emilia-Romagna (-1.2 years; from 83.6 to 82.4). Life expectancy at birth, instead, remains substantially unchanged in Basilicata and Calabria and decreases only slightly in most of the regions of the South and Islands, with the exception of Abruzzo and Sardegna, where it is estimated a decrease of around one year (from 83.4 to 82.4 and from 83.1 to 82.1, respectively).

3 Data extracted from the Eurostat database on 27/02/2021.

4 The estimates presented here are the result of updated scenario results published in recent months on the Istat website at https://www.istat.it/it/archivio/241844, to which reference should be made for more detailed methodological information.

5 It should be noted that in this case the figure refers to an estimate based on the calculation method used by Istat, which, differently from the method used by Eurostat, adopts a more detailed model for estimating survival in old age.

Figure 6. Change in life expectancy at birth, by region. Years 2019 and 2020 (a)**. In years**

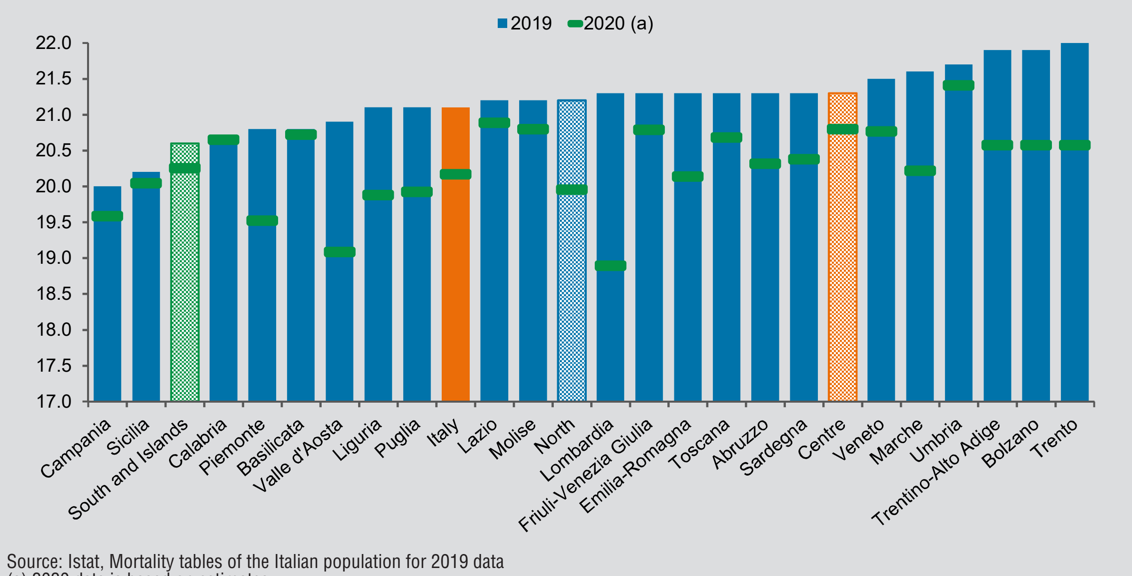


Source: Istat, Mortality tables of the Italian population for 2019 data
(a) 2020 data is based on estimates.

The critical aspects appear even more evident if we restrict our attention to the estimates of life expectancy among the population aged over 65 (Figure 7).

Once again, Lombardia is the region in which the estimates for 2020 show the sharpest drop with respect to the previous year: if in 2019 a 65 year-old resident in Lombardia could hope to live an average of about 21 more years; in 2020, this expectancy will be reduced by more than 2 years. Valle d'Aosta (-1.8), Marche (-1.4), Trentino-Alto Adige and Piemonte (-1.3 years in both cases) are also at the top places in terms of loss of expected longevity. Basilicata and Calabria also stand out in this case for the substantial invariance of the indicator.

Figure 7. Life expectancy at 65 by region and geographic area. Years 2019 and 2020 (a)**. In years**



Source: Istat, Mortality tables of the Italian population for 2019 data
(a) 2020 data is based on estimates.

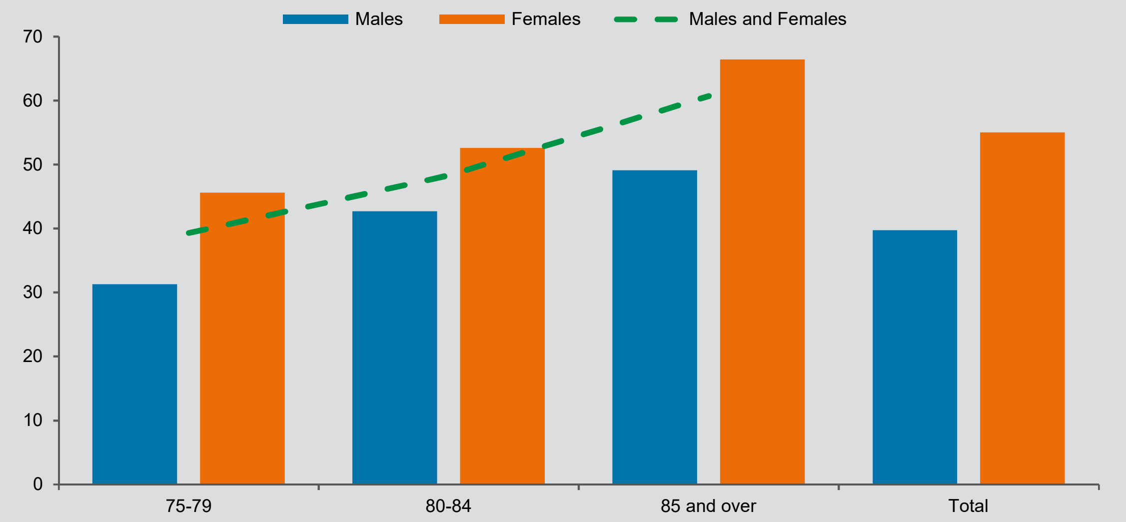
Almost half of the elderly are in poor health, a figure that has been declining in recent years

The increase in life expectancy of the population, together with the decrease in the birth rate, have strongly characterised our Country in recent decades, with a significant impact on the age structure of the population. As of 1 January 2020, Italian residents aged 75 and overare more than 7 million (they were about 5 million 900 thousand in 2010), corresponding to 11.8% of the total population. The current pandemic has had a strong impact on the elderly population, the most fragile segment in terms of health conditions. In particular, in 2020, 48.8% of the population aged 75 and over suffers from three or more chronic diseases or has severe limitations in carrying out the activities that people usually do. This percentage is higher for those living in the South and Islands (56.9% compared to 44.6% in the North and 47% in the Centre) and among women (55% compared to 39.7% among men) and reaches 60.7% among people aged 85 and over (compared to 39.3% among people aged 75-79) (Figure 8).

Since 2014, a reduction in the proportion of older people with severe limitations or in multi-chronic conditions has been observed (they were about 54% in 2013) due to the general improvement in the health conditions of the population, but the levels among the elderly population remain high. This reduction was higher among women (-5.8 percentage points) than among men (-3.2 percentage points).

The percentage of older people in poor health is lower among those with at least a high school degree (35.5% among men and 45.7% among women), while it increases among those with at most a primary school degree (44% among men and 59.5% among women).

Figure 8. 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 2020 (a). **Percentage valuess**

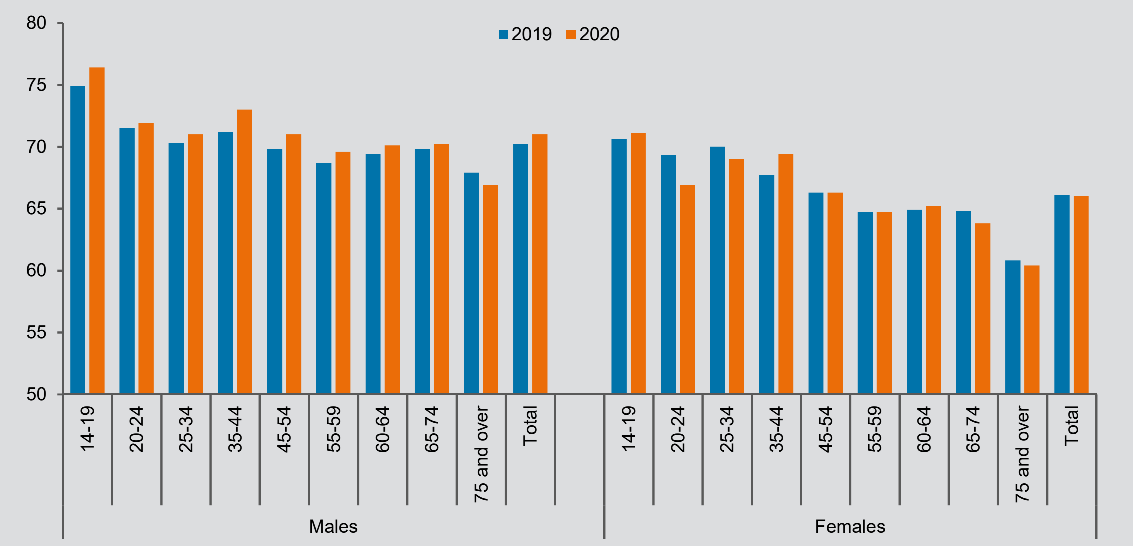


Source: Istat, Survey on Aspects of Daily Life
(a) 2020 data are provisional.

Mental well-being worsens among the elderly and residents in Lombardia, Piemonte and Campania

The analysis of the mental health index[6] is particularly important in the period of the pandemic. As the score increases, taking values between 0 and 100, the evaluation of mental health conditions improves. In 2020, the index in Italy had a value of 68.8 (Figure 9). For the total population there is no significant change compared to 2019.
In the first phases of the pandemic, the evaluation of one's own health conditions was probably influenced by the relativisation of one's own psycho-physical state in comparison with that of other people in worse situations. In addition, an important role was played by the family context, which made possible to maintain a climate of serenity in the majority of families[7]. However, different trends emerge in subgroups of the population. Men improve by almost 1 point while the score remains unchanged among women. The mental well-being of people aged 75 and over worsens both among men and women, dropping by 1 point among men of this age group (-2 points for residents in the North); among women the drop is also observed for those aged 65-74 (-1.7). The conditions of greater isolation experienced during 2020 affected above all the mental health of people in the 55-64 age group living alone, again especially in the North. Even among young women aged 20-24, however, the score drops by more than 2 points compared to the previous year. The mental health index worsens in Lombardia, Piemonte and Campania, which present the lowest values along with Molise. Gender differentials widen, with more unfavourable conditions for women (66 vs. 71.1).

Figure 9. Mental health index for persons aged 14 and over by gender and age groups. Years 2019 and 2020 (a). **Average scores**



Source: Istat, Survey on Aspects of Daily Life
(a) 2020 data are provisional.

6 Among the psychometric instruments developed at international level, the mental health index (MH) from the SF-36 is included among the indicators of the BES and is based on the aggregation of the scores obtained by each individual when answering five specific questions. The index provides a measure of the psychological distress of individuals 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. J Clin Epidemiol. 51: 1179-88).

7 https://www.istat.it/it/files//2020/06/Giornate_in_casa_durante_lockdown.pdf.

Mental well-being declines with age, with a difference of about 10 points between the scores of younger and older people.

Avoidable mortality is reducing over time, especially among men

The avoidable mortality indicator refers to mortality of persons under 75 years of age that could be significantly reduced.

It 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 among the population and through 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[8]. In 2016, 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).

In 2018, Italy's standardised rate of preventable mortality was 16.8 per 10,000 residents, one of the most advantageous position in the European ranking. In particular, if preventable mortality is considered, the rate was 10.4 per 10,000 and if treatable mortality is taken into account, the rate is 6.5 per 10,000.

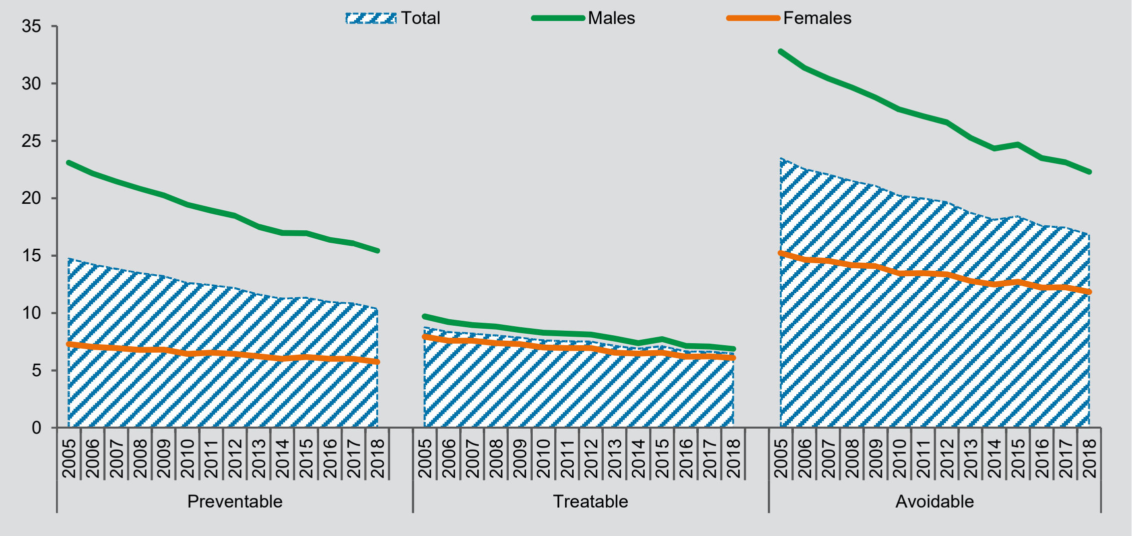
The gender differences are considerable, with higher values of avoidable mortality among men than among women (22.3 per 10,000 inhabitants against 11.8) (Figure 10). In particular, the male disadvantage is mainly explained by the 'preventable' component, which is more linked to lifestyles (e.g. alcohol abuse, greater propensity to smoke, inadequate diet) and to more risky behaviour (accidental events, work activity, etc.).

Among the main causes of avoidable mortality we find lung cancer, which in 2018 caused the death of 16 thousand 274 people under the age of 75, followed by ischemic heart disease (11 thousand 636 deaths) and colorectal cancer (7 thousand 100 deaths), all of which are more common causes of death among men. Among women, on the other hand, the leading cause of avoidable mortality is breast cancer, followed by lung cancer and colorectal cancer. Over time, a strong reduction in avoidable mortality has been observed (the standardised rate was 23.5 per 10,000 in 2005), especially in the preventable component (it was 14.8 per 10,000 in 2005). This is explained by the decrease in mortality from some of the main causes: for example, deaths from lung cancer have decreased (from 18,332 in 2005 to 16,274 in 2018) and deaths from ischaemic heart disease, which have declined considerably from 2005 to 2018 (from 18,826 to 11,636). The decline in these causes of death was observed especially among men, with a consequent reduction in the gender gap. The rate of avoidable mortality among women has decreased less over time (from 15.2 per 10,000 residents in 2005 to 11.8 per 10,000 residents in 2018); the time trend shows that among women, for some main causes such as ischaemic heart disease, cerebrovascular disease and diabetes mellitus, there has been a reduction, while for lung cancer (a cause

8 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.

of death considered preventable) and, to a lesser extent, uterine cancer (a cause of death considered treatable) there has been an increase.

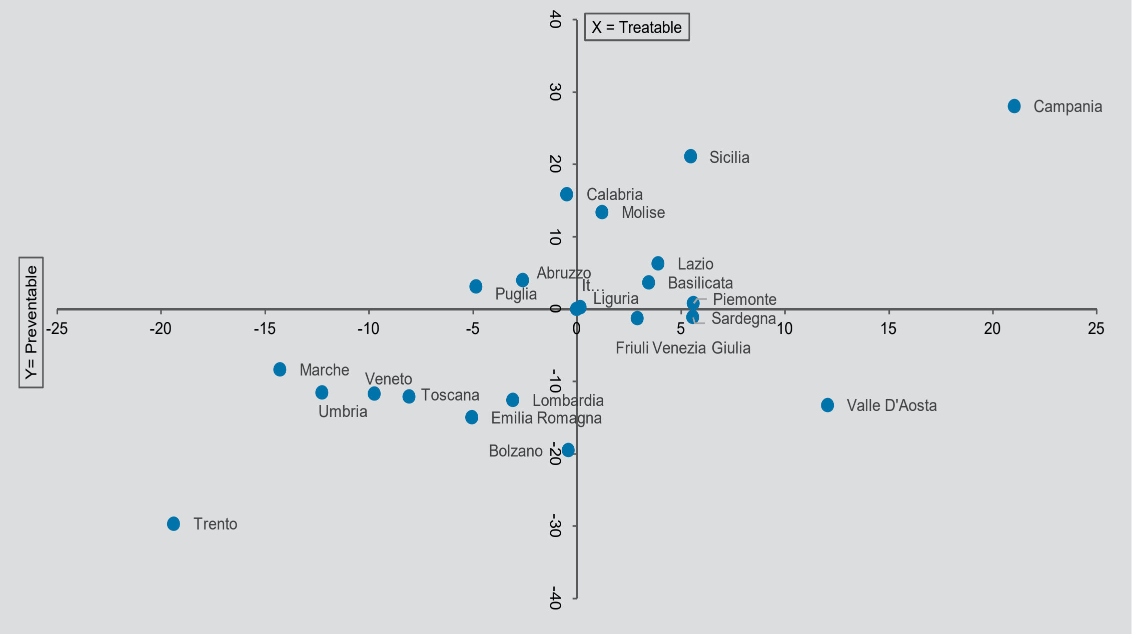
Figure 10. Standardised rates of avoidable mortality (preventable and treatable) of persons aged 0-74 years by gender. Years 2005-2018. Per 10,000 residents



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 are observed on the territory with respect to the two components of avoidable (preventable and treatable) mortality (Figure 11).

Figure 11. Standardised rates of avoidable mortality (preventable and treatable) of persons aged 0-74 years by region. Year 2018. Percentage changes compared to national average



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

It is interesting to note that some regions present only one component higher than the national average and not both, indicating the need to adopt differentiated policies on the territory.
The most critical situations are observed in Campania, followed by Sicilia, Molise, Lazio, Basilicata and Piemonte, where both preventable and treatable mortality rates are higher than the average. Friuli-Venezia Giulia, Sardegna and especially Valle d'Aosta present rates of preventable mortality above the national average and, on the contrary, rates of treatable mortality below the observed average value.
Puglia, Abruzzo and Calabria present, 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 Umbria, Veneto, Toscana, Marche, Lombardia, Emilia-Romagna and the Autonomous Province of Bolzano where, for both components of preventable mortality, the values are below the general average. Liguria, finally, presents values overlapping with the national average.

Slight increase in infant mortality, reduction in mortality from malignant tumours among adults and in mortality from dementia and diseases of the nervous system

The infant mortality rate in 2018 was 2.9 per 1,000 live births, with a slight increase in comparison to both 2016 and 2017 (2.8 per 1,000 live births). For boys, infant mortality values are higher than for girls (3.1 per 1,000 live births male, 2.6 if female). The Centre gives the greatest contribution to the increase, where the rate rises from 2.3 to 2.6 per 1,000 live births, and in the South and Islands, where the rate rises from 3.4 to 3.7 per 1,000 live births. In the North, however, the rate remains constant compared to 2017 (2.4 per 1,000).
In adulthood (20-64 years), mortality from malignant cancers, considered premature, is particularly relevant. In 2018, the mortality rate for these diseases was 8.4 per 10,000 residents, a value that has been progressively decreasing in recent years. The mortality rate for malignant cancers among women in 2018 stood at 7.6 per 10,000, while it rose among men to 9.2 per 10,000. At the territorial level, also in 2018, higher values of mortality from malignant tumours were confirmed in the South and Islands (8.9 per 10,000 inhabitants against 8.2 in the North and Centre). The highest value of the indicator, for both men and women, was registered in Campania (11 and 8.8 per 10,000 inhabitants respectively). In 2019, the death rate from road accidents among young people remained at the levels of previous years (0.7 deaths per 10,000 residents aged 15-34). A strong gender difference is observed, with a value of 1.1 per 10,000 among males and 0.2 among females. From the territorial point of view, the mortality rate for road accidents is similar in the North and the South and Islands (0.7 per 10,000 residents); while it is lower in the regions of Central Italy (0.6 per 10,000).
In a country like Italy, characterised by a very high life expectancy and therefore by a large proportion of elderly people, diseases such as dementia and diseases of the nervous system are widespread, and the mortality rate is 33 per 10,000 inhabitants. Women have a mortality rate of 31.8, men 34. After an almost constant increase since 2015, a slight decrease is observed in 2018 compared to the previous year. The highest mortality rates due to dementia and diseases of the nervous system are found mainly in the North (36.1 per 10,000) compared with 31.1 in the Centre and 29.4 in the South and Islands.

Sedentary lifestyles are reducing, but more people are overweight

Over the past year, the ongoing pandemic and the resulting restrictions have significantly affected people's lifestyles. The closure of shops and the limits imposed on travel, especially during the lockdown, have, for example, led to a decrease in the proportion of the population that has been able to engage in structured physical activity in gyms and sporting centres, and have reshaped the times and ways of eating meals, which, much more often than in the recent past, have taken place at home.

In 2020, 33.8% of people are sedentary. Women are more sedentary than men are, although the gender gap has been decreasing over time (it was 7.8 percentage points in 2010 and will decrease to 6.3 percentage points in 2020) (Figure 12). Sedentariness increases with age: it affects 2 out of 10 people among adolescents and young people up to 24 years of age and about 7 out of 10 people among the population aged 75 and over.

Compared to what was observed in 2019 (35.5%), the indicator shows a further improvement in line with the trend recorded over the last five years. A strong territorial gradient between North and South emerges but, compared to 2019, a significant decrease in sedentariness is observed in the central regions, which fall from 35.1% to 30.2%. The decrease also affected young adults aged 25-44 (-2.6 percentage points) and people aged 60-74 (-2.5 percentage points), with no gender differences. On the other hand, the data is also explained by what was observed in April 2020[9] when it emerged that, during the lockdown period of phase 1 of the COVID-19 pandemic, 22.7% of the population aged 18 years and over engaged in physical activity on an average day, although almost exclusively in their living spaces (indoors or outdoors). During the time of the strongest pandemic restrictions, the population tried to stay physically active, but the time spent at home in sedentary activities, either working or doing leisure activities, increased. This explains why, in parallel, a 45.5% share of overweight people among the adult population aged 18 years and over has been observed in 2020. Men have higher levels of excess weight than women do (54.7% vs 36.9%), but it is among the latter that the largest increases over time has been occurred.

Excess weight is higher with increasing of age (already in the 45-54 age group, it affects at least 5 out of 10 people) and in the regions of Southern Italy. Compared to 2019, there is an increase in the share of overweight/obese people in both the North and the South and Islands (from 42.1% to 43.4% and from 49.3% to 50.4% respectively), while there is a reduction in the regions of Central Italy (from 43.7% to 42.2%).

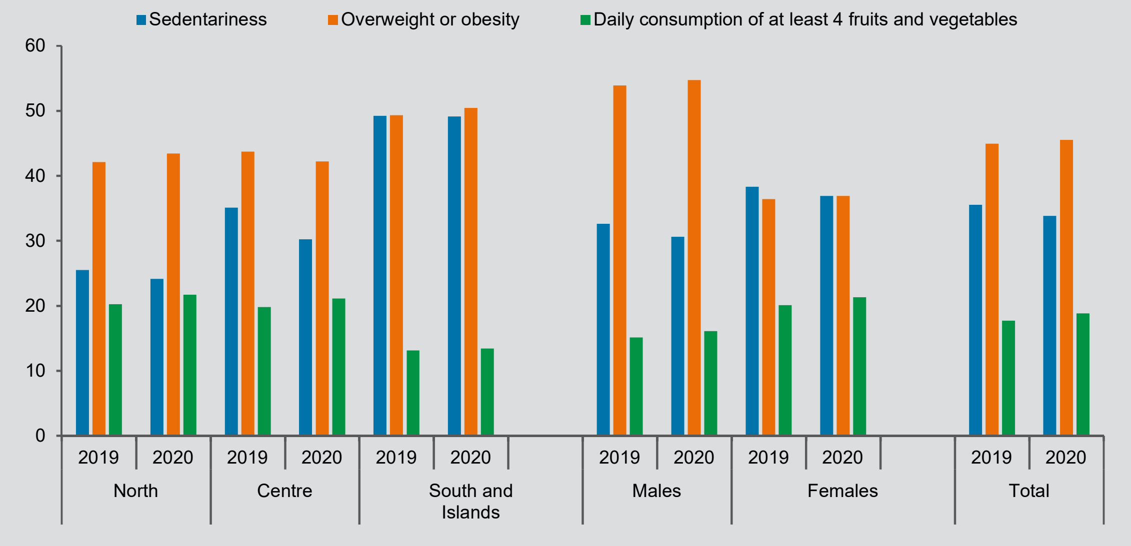
With regard to eating habits in 2020, due to the increased stay at home especially during the lockdown period, the share of those who declared that they usually eat lunch at home on non-holiday days increased (from 72.4% in 2019 to 74.9% in 2020). The largest increases were observed among children and young people up to the age of 14 (+8.8 percentage points) and among young adults aged 20-34 (+4.1 percentage points) who presumably in 2020, more than in the past, engaged in study, work or other activities from home. At the same time, data from the Phase 1 lockdown of the pandemic indicate that 1 out of 4 people during that period reported eating more food than before, and the youngest people did so the most (39.5%).

With regard to healthier eating styles, in 2020 the share of the population aged 3 years and over who consumed at least 4 portions of fruit and/or vegetables daily was 18.8%, a slight recovery with respect to the previous year, although levels remain lower than those recorded in 2015-2018.

9 https://www.istat.it/it/files//2020/06/Giornate_in_casa_durante_lockdown.pdf.

Higher levels of consumers of at least 4 portions of fruit and/or vegetables per day are observed in the North (21.7%) and the Centre (21.1%), compared with the South and Islands (13.4%).
Women are more virtuous (21.3% compared to 16.1% of men) and so is the population of both genders aged 60 and over (23.6%).

Figure 12. 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 and 2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of Daily Life
(a) 2020 data are provisional.

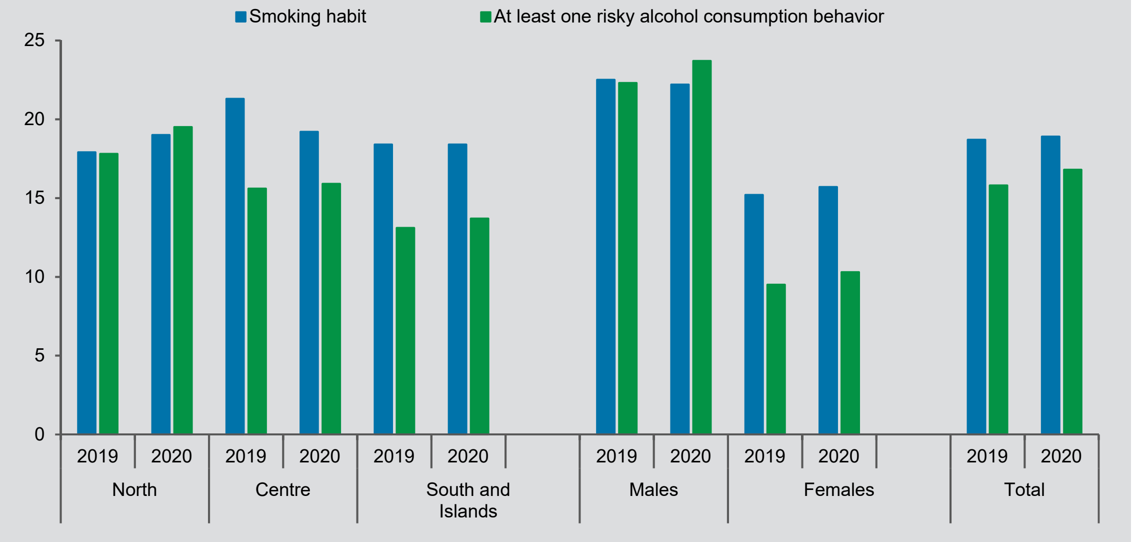
Stable smoking rates and slightly increasing risky alcohol consumption

In 2020, the percentage of smokers aged 14 years and over is 18.9%, stable compared to the previous year (Figure 13).
Smokers decrease in central Italian regions (from 21.3% to 19.2%) and, on the contrary, rise in northern Italian regions (from 17.9% to 19%), with an increase in territorial convergence. Smoking is more prevalent among men (22.2% vs. 15.7%); however, this gap has reduced considerably over time due to a strong reduction in the number of smokers among men, while it has remained stable among women.
The smoking habit is higher among young people aged 20-24 and remains fairly stable until the age of 60-64, while it decreases in subsequent age groups. At-risk alcohol use affected 16.8 % of the population aged 14 years and over in 2020. After a significant decrease in 2019, in 2020 it is again at the levels recorded in 2015-2018.
The most risky alcohol consumption habits are confirmed to be more widespread in the Northern regions (19.5%) compared to the Centre (15.9%) and especially to the South and Islands (13.7%). With respect to 2019, a significant increase is observed especially in the northern regions (+1.7 percentage points).

The gender gap remains wide also in 2020, with a higher share of men with harmful drinking habits; over time, however, as already observed for other risk factors considered, the gender gap is reducing and the behaviour of women is becoming more similar to that of men.

The highest percentages of risk drinkers are found among adolescents (29.4%), followed by young people aged 18-24 (20%) and people aged 65 and over (18.8%). The risky consumption behaviour of the latter two population groups is quite different: the habit of the former is more related to overconsumption, especially at weekends, while the behaviour of the latter is of a non-moderate daily nature.

Figure 13. 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 and 2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of Daily Life
(a) 2020 data are provisional.

The protective role of the educational qualification is also confirmed for health risk factors, with a greater attention to healthier behaviour among people with higher educational qualifications. For example, there is a higher proportion of people with a low educational qualification who are overweight or obese (56.1%), compared with those who have a degree or a higher educational qualification (34.5%). An exception to this is the excessive alcohol consumption, (when considering binge-drinking episodes), for which there is an inverse relationship to educational qualifications.

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 behavioral or emotional control, and psychological well-being). The final score varies from 0 to 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. **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.
6. **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.
7. **Road accidents mortality rate (15-34 years old):** Mortality rate in road accidents by five year age groups for people aged 15-34 years, standardized 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.
8. **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, standardized 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.
9. **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, standardized 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.
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 (standardized 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 standardized using the 2013 European standard population.
    Source: Istat, Survey on Aspects of daily life.
12. **Smoking (standardized rates):** Proportion of people aged 14 and over who report current smoking. The indicator is standardized using the 2013 european standard population.
    Source: Istat, Survey on Aspects of daily life.
13. **Alcohol consumption (standardized 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 standardized using the 2013 European standard population.
    Source: Istat, Survey on Aspects of daily life.
14. **Sedentariness (standardized 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 standardized using the 2013 European standard population.
    Source: Istat, Survey on Aspects of daily life.
15. **Adequate nutrition (standardized 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 standardized using the 2013 European standard population.
    Source: Istat, Survey on Aspects of daily life.

Indicators by region and geographic area

REGIONS AND GEOGRAPHIC AREAS	Life expec-tancy at birth (a)	Healthy life expectancy at birth (a)	Mental health index (SF36) (b)	Avoidable mortality (age 0-74) (c)	Multimorbidity and severe limitations (75 years and over) (d)	Infant mortality rate (e)	Road accidents mortality rate (15-34 years old) (f)
	2020 (*)	2019	2020 (**)	2018	2020 (**)	2018	2019
Piemonte	81.6	58.9	67.7	17.5	46.4	2.0	0.7
Valle d'Aosta/Vallée d'Aoste	80.9	60.7	70.3	17.2	29.9	2.2	0.0
Liguria	81.9	59.2	69.3	16.9	45.3	2.5	0.7
Lombardia	81.2	60.0	68.0	15.7	46.5	2.6	0.5
Trentino-Alto Adige/Südtirol	82.8	65.8	71.9	14.1	33.6	3.3	0.7
Bolzano/Bozen	*82.8*	*69.1*	*71.4*	*15.5*	*29.3*	*3.2*	*1.2*
Trento	*82.8*	*62.7*	*72.4*	*12.9*	*37.8*	*3.4*	*0.3*
Veneto	83.1	60.3	69.4	15.1	39.6	2.1	1.0
Friuli-Venezia Giulia	83.0	61.8	71.1	17.0	47.6	2.2	0.7
Emilia-Romagna	82.4	59.6	69.9	15.3	45.5	2.3	0.7
Toscana	83.0	59.8	68.4	15.2	43.6	2.2	0.6
Umbria	83.8	60.0	68.1	14.8	56.1	3.1	0.6
Marche	82.6	58.8	68.1	14.8	44.2	1.7	0.5
Lazio	83.1	58.6	69.3	17.6	49.1	3.0	0.6
Abruzzo	82.4	57.3	68.6	16.8	54.0	3.0	0.5
Molise	82.6	55.5	67.6	17.8	37.6	2.1	0.6
Campania	81.4	58.0	67.6	20.8	62.1	3.8	0.6
Puglia	82.1	57.8	69.0	16.5	47.8	3.3	0.8
Basilicata	82.4	54.3	68.9	17.4	53.3	4.0	0.3
Calabria	82.5	49.7	68.6	17.8	56.7	4.0	0.8
Sicilia	82.0	55.9	68.9	18.8	60.6	4.0	0.8
Sardegna	82.1	54.4	70.0	17.3	62.0	2.5	0.7
North	82.0	60.1	68.9	15.9	44.6	2.4	0.7
Centre	83.1	59.1	68.9	16.3	47.0	2.6	0.6
South and Islands	82.2	56.2	68.6	18.5	56.9	3.7	0.7
Italy	82.3	58.6	68.8	16.8	48.8	2.9	0.7

(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;
(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.
(*) Estimated data;
(**) Provisional data.

Age-standardised cancer mortality rate (20-64 years old) (g)	Age-standardised mortality rate for dementia and nervous system diseases (65 years and over) (h)	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)
2018	2018	2019	2020 (**)	2020 (**)	2020 (**)	2020 (**)	2020 (**)
8.8	35.9	10.9	41.9	19.7	17.8	28.9	26.7
6.9	54.9	11.9	43.5	17.2	23.0	25.8	21.0
8.6	35.2	10.6	42.6	18.4	17.1	22.2	20.6
8.1	36.1	10.8	43.3	19.8	18.4	25.0	19.7
6.8	36.9	11.4	40.7	18.0	23.4	15.0	21.1
6.9	*39.6*	*10.4*	*41.3*	*18.0*	*25.0*	*13.6*	*15.6*
6.7	*34.6*	*12.2*	*40.1*	*18.0*	*21.9*	*16.4*	*26.5*
8.0	39.6	10.4	43.9	16.5	20.7	19.8	20.4
8.5	28.9	10.9	44.3	15.7	22.4	22.3	21.8
7.9	34.4	10.5	45.4	20.5	21.4	25.2	23.2
8.0	32.3	10.6	40.4	20.4	18.5	26.1	22.8
7.9	29.4	10.2	43.9	20.4	16.2	33.4	22.1
8.0	36.5	10.8	43.5	18.7	16.2	28.9	21.9
8.5	28.7	9.7	43.0	18.7	14.2	32.7	19.7
8.1	31.7	9.7	46.5	17.9	15.9	34.6	14.3
8.6	21.8	10.1	49.3	19.3	22.6	41.0	16.8
9.8	24.9	8.8	55.3	18.8	11.6	56.2	10.7
8.4	31.0	9.2	48.0	16.4	16.3	42.2	12.9
8.4	27.3	8.9	50.0	19.4	17.8	46.4	12.6
8.1	25.0	8.5	48.4	17.0	16.1	49.6	12.6
8.7	30.5	7.8	51.2	20.3	9.6	56.6	14.0
9.1	39.9	9.2	42.5	19.3	19.6	31.0	22.3
8.2	36.1	10.7	43.4	19.0	19.5	24.1	21.7
8.2	31.1	10.2	42.2	19.2	15.9	30.2	21.1
8.9	29.4	8.7	50.4	18.4	13.7	49.1	13.4
8.4	**33.0**	**10.0**	**45.5**	**18.9**	**16.8**	**33.8**	**18.8**

2. Education and training[1]

Education, training and skill levels influence people's well-being and open up pathways and opportunities that would otherwise be closed.

The focus on skills upgrading is one of the main points for the implementation of the European Green Deal policies. Moreover, the Next Generation Fund has, among its contents, education and skills agendas. In Italy, despite improvements over the last decade, the system is still unable to offer all young people the same opportunities for an adequate education.

The level of education and skills young people are able to achieve still largely depends on social background, socio-economic context and the geographical area in which one lives.

The delay compared to the European average and the territorial gap, in fact, are found in all indicators on education, lifelong learning and skill levels. The 2020 pandemic, with the consequent closure of schools and universities and the transition to distance, or integrated, education, has exacerbated inequalities.

The analysis of the indicators in the Education and Training domain will follow the lifelong learning pathway, in a process that begins with attendance at the nursery school from an early age and with pre-primary school, and then extends beyond secondary school and university with lifelong learning and, more generally, with cultural participation activities.

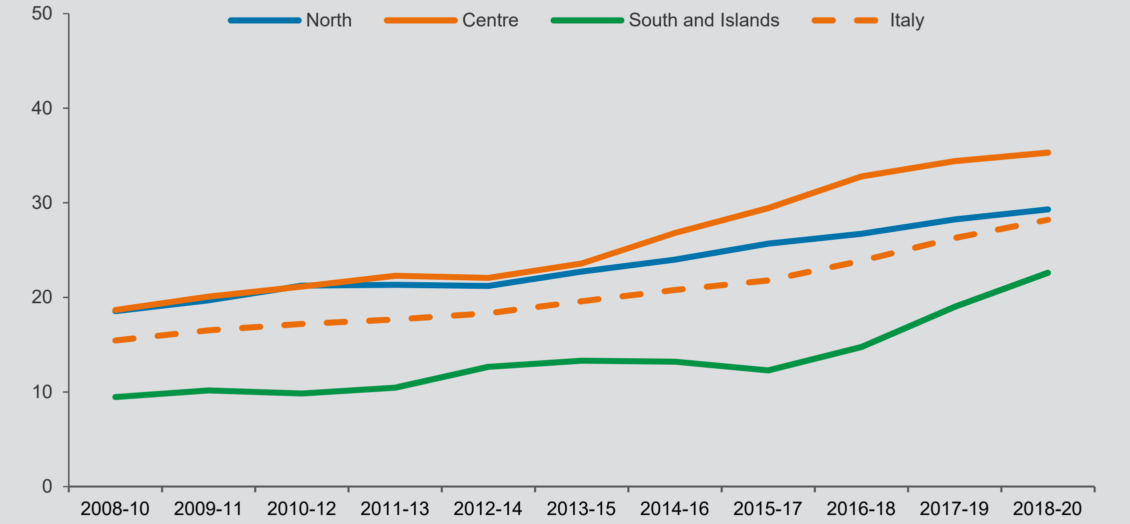
Few children attend early childcare services

The first step on the educational path is the inclusion of children aged 0-2 years in dedicated early childhood services. Children's earliest experiences are the foundation of all future learning, having positive effects on children's behavioural skills and lightening the burden of family work, especially for women. Investing in the supply of and demand for early childcare services can, therefore, have a positive effect in addressing inequalities of opportunity for children, increasing gender equality and sharing family burdens[2]. However, over the years there has been neither adequate investment nor widespread participation in early childhood education, especially in Southern Italy. Although the inclusion of 0-2 year olds in childcare facilities has increased over time, from 15.4 per cent in 2008-2010 to 28.2 per cent in 2018-2020, the level is still below the European target of at least 1 in 3 children set for 2010 (Figure 1).

1 This chapter was edited by Barbara Baldazzi, with contributions from Emanuela Bologna, Raffaella Cascioli, Claudia Di Priamo, Donatella Grassi, Anna Emilia Martino, Giulia Milan, Miria Savioli, Alessandra Tinto, Azzurra Tivoli and Laura Zannella.

2 See Laws 285/1997, 448/2001, 107/2015, 11/2016 et seq. and Legislative Decree 65/2017, which established an integrated education system for children aged 0-6 years recognizing service provided by kindergarten as having formative purposes, being aimed at encouraging the expression of the child's cognitive, affective and relational potential.

Figure 1. Children aged 0-2 years enrolled in early childcare services by geographic area. Years 2008/2010-2018/2020 (a). Three-term moving average. Percentage values

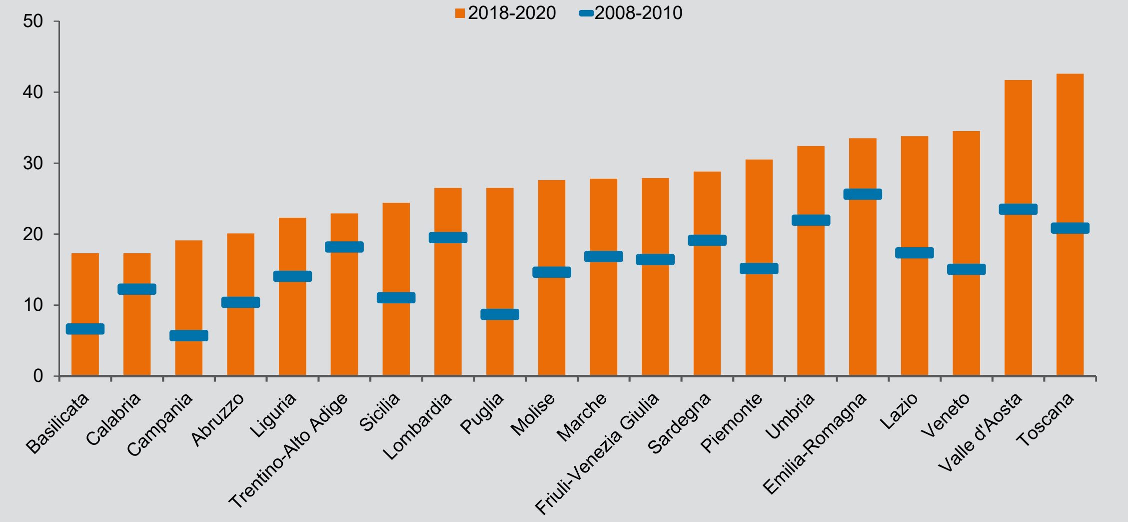


Source: Istat, Survey on Aspects of daily life
(a) 2018/2020 data are provisional.

At the territorial level, the highest inclusion is observed in the regions of the North (43% of children aged 0-2 years enrolled in nursery schools in the autonomous province of Trento, 41.7% in Valle D'Aosta, 34.5% in Veneto), in the Centre (42.6% in Toscana, 32.4% in Umbria and 33.8% in Lazio) and in Sardegna (28.8% - Figure 2).
Access to early childhood education services follows, in fact, the geography of the availability of services on the Italian territory, and suffers from strong delays and territorial inequalities. On the supply side of early childhood services, with the exception of Sardegna, there is still a large delay in southern Italy, although many of the regions in this area have recorded the most significant increase in recent years. In the 2018/2019 educational year, 13,335 early childhood services were active on the national territory with a coverage of 25.5% of places for resident children aged up to 2 years, still far from the 33% parameter set by the Eu for 2010[3].
The propensity to use the kindergarten is, therefore, linked to the availability of facilities, but also to socio-economic factors. In fact, the net annual income of families with children who attend nursery schools is, on the average, higher than that of families who do not attend; children with more educated parents have more frequent access to educational services. Thus, it is families in more vulnerable situations that have difficulty in accessing early childhood services, confirming how socio-economic inequality can translate into inequality of opportunity.

3 The Lisbon European Council of 2000 established as a priority the strengthening of pre-primary services. The strategy was subsequently divided into two measurable objectives. For pre-primary school age, between 3 and 5 years, the need was established to provide childcare for at least 90% of children. For early childhood, under the age of 3, the target was set to provide at least 33 places for every 100 children.

Figure 2. Children aged 0-2 years enrolled in early childcare services by region. Years 2008/2010 and 2018/2020 (a). **Three-term moving average. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2018/2020 data are provisional.

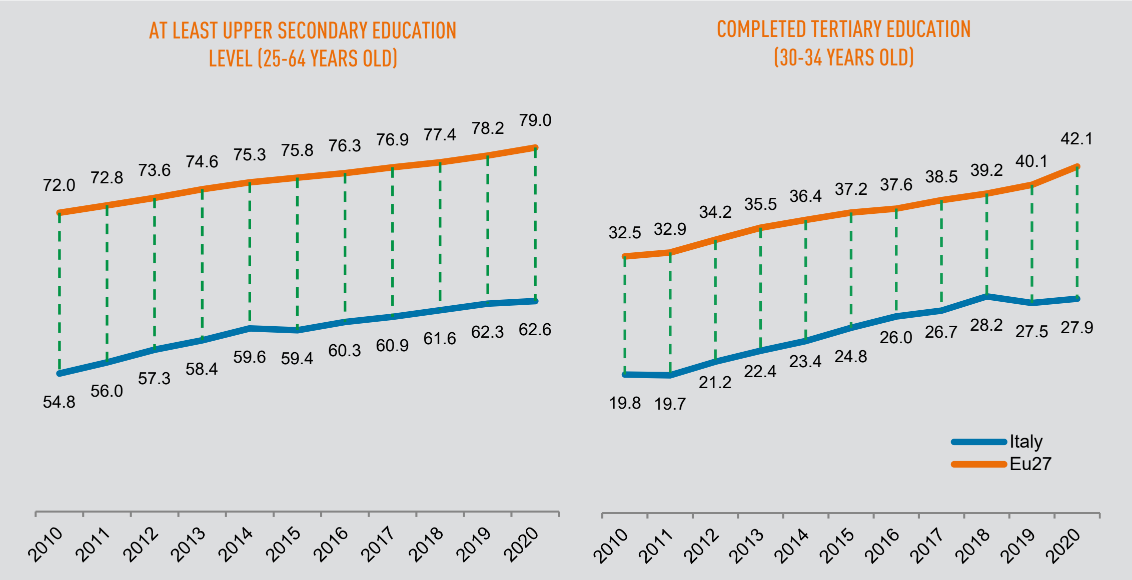
The second part of the educational path is implemented with the participation of children aged 3-5 years in pre-primary school, which is a service widely spread throughout the Country and usually free of charge. By reason of these characteristics, in territories where there is limited availability of early childhood services (mainly in the South) the possibility of anticipating entry into pre-primary school before age 3 is widely exploited. In the 2018/2019 educational year, 14.8% of 2-year-olds attended pre-primary school, with percentages above 20% in Calabria (29.1%), Campania (25%), Basilicata (23.7%), Molise (23.3%), Abruzzo and Puglia (22.5%), and Sicilia (20.1%).
When they reach the age of 4-5, almost all the children are, in any case, included in the educational pathways: about 95% of the children attend pre-primary school or the first year of primary school (with average values of 97.6% in the South, 92.3% in the Centre and 93.9% in the North), a percentage that also corresponds to the European target to be reached in 2020.

Despite steady progress in education, Italy still remains distant from Europe

In order to monitor the next steps of the ladder for the attainment of an adequate level of education, the two main indicators are the share of 25-64 year-olds with at least a high school diploma and the share of 30-34 year-olds with a university or other tertiary degree. Although these two indicators are constantly on the rise, so far Italy was unable to catch up with most European Union countries (Figure 3). In the second quarter of 2020, in Italy, 62.6% of 25-64 year-olds had at least a high school diploma, 16 percentage points lower compared to the European average (79%). Lower percentages are recorded only in Malta (57.4%) and Portugal (55.2%). The proportion of young people aged 30-34 who have attained a university or tertiary degree is 27.9%, compared with 42.1% of the European average, second last in the ranking before Romania (25.2%) and 14 points behind Europe.

In Sicilia and Puglia, the share of 25-64 year-olds with at least a high school diploma, in the second quarter of 2020, is around 52%, 10 percentage points lower than the Italian average and around 20 points lower than the regions with the highest values, such as the autonomous provinces of Bolzano and Trento, Friuli-Venezia Giulia, Lazio and Umbria, which exceed 70%. At the same time, the proportion of 30-34 year-olds who, in the second quarter of 2020, hold a tertiary degree is around 33% in the Centre, 30.9% in the North and only 21.7% in the South and Islands.
Women have better results than men for many indicators of education and training: the gap in the share of 25-64 year-olds who have at least a high school diploma, in the second quarter of 2020, is 4.7 percentage points in favour of women (64.9% among women and 60.2% among men). For tertiary degrees, the gap is even wider: 21.7% of men aged 30-34 hold a tertiary degree compared to 34.3% of women. Despite the fact that there are more women graduates, the gap with other European countries is still significant: in the average of European Union countries, 47.1% of women aged 30-34 have a university degree, 13 percentage points more than men.

Figure 3. Persons aged 25-64 having completed at least upper secondary education (ISCED level not below 3) and persons aged 30-34 having completed tertiary education (ISCED 5, 6, 7 or 8) in Italy and Eu27. Years 2010-2020 II quarter. Percentage values



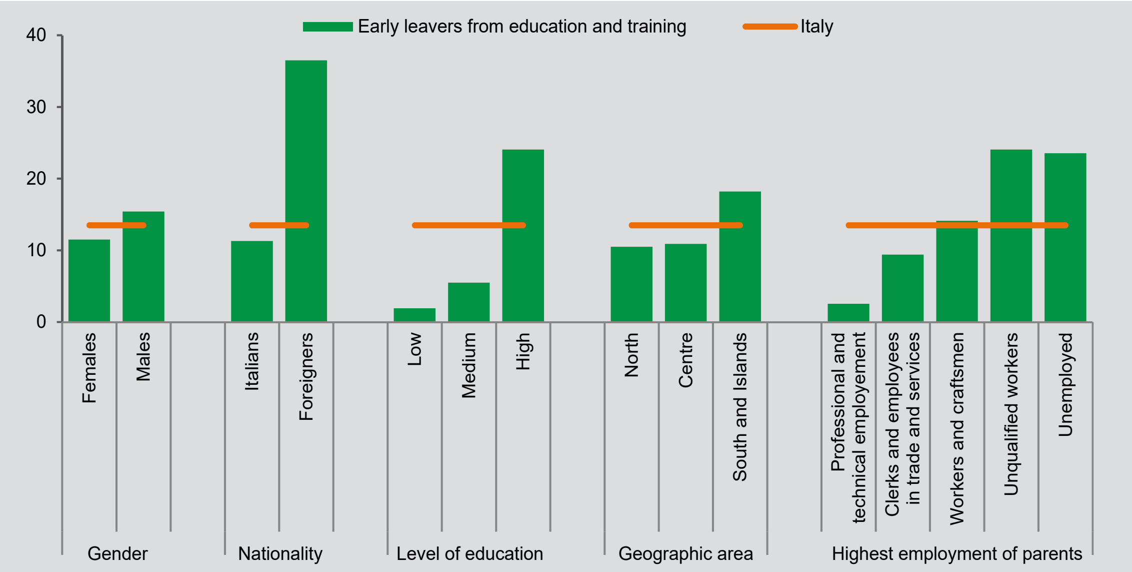
Source: Eurostat, Labour Force Survey

Still too many NEETs and early leavers from education and training

The share of those who are not studying and not working (the NEETs) among young people aged 15-29 years remains high and returns to grow, after several years of decrease, to 23.9% of young people in the second quarter of 2020 (it was 21.2% in the second quarter of 2019). The component due to inactivity is particularly influential, especially in the Northern and Central regions, where the job search has suffered an unexpected interruption due to the COVID-19 pandemic.

Equally high is the quota of young people who leave the education and training system early after having attained at most lower secondary school qualification. In the second quarter of 2020, in Italy, the educational pathway was interrupted very early for 13.5% of young people aged between 18 and 24, a value that is stable compared to the second quarter of 2019. The phenomenon of exit from the education and training system worries, above all, in terms of inequalities. Through the analysis of 2019 data, with which it is possible to have a snapshot of the characteristics of those who leave school prematurely, it emerges how the prosecution in the training path, the skills learned and the subsequent choices are still highly determined by the socio-economic context of origin. The educational qualification of the parents strongly influences school success and permanence in the education and training system. The children of parents with at most a lower secondary school diploma have an exit rate from education and training of 24%, which is reduced to 5.5% among the children of parents with an upper secondary school diploma and to 1.9% among the children of parents with at least a tertiary degree. Similarly, children with at least one parent employed in skilled and technical occupations drop out of school in 2.5% of cases compared to 24% among children of parents employed in unskilled occupations (Figure 4). Among males and foreigners, moreover, the quota of those who drop out of school is, respectively, 15.4% and 36.5%, higher if compared with that of girls (11.5%) and young Italian citizens (11.3%).

Figure 4. Early leavers from education and training by gender, geographic region, citizenship, educational attainment and highest parental occupation. Year 2019. Percentage values



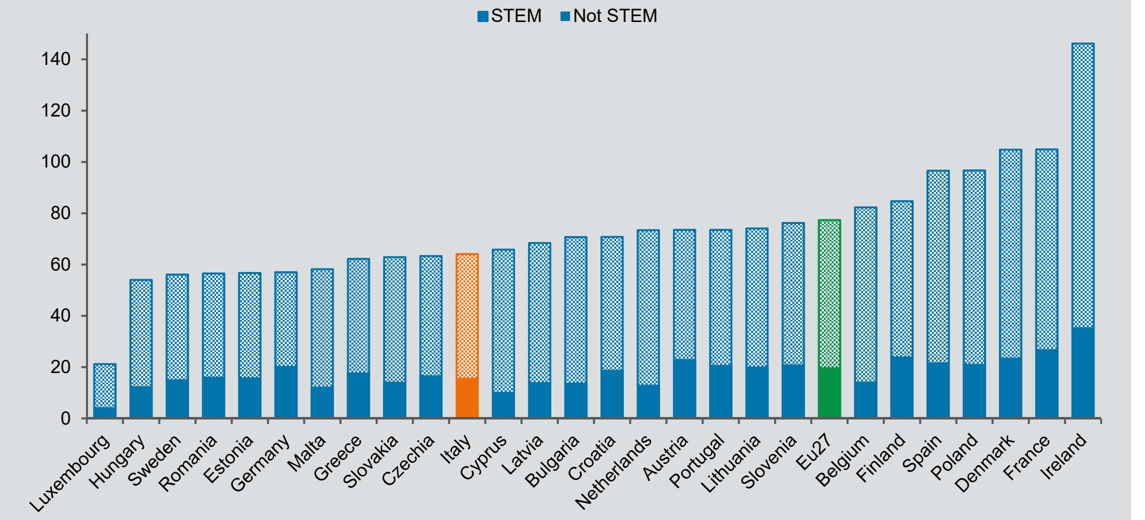
Source: Eurostat, Labour Force Survey

More women graduated in tertiary education than men, but fewer graduated in science disciplines

Continuing in the educational path, the student has the option of enrolling in university or other tertiary courses. Only half of new graduates enrol for the first time at university in the same year in which they obtained their upper secondary school diploma. Enrolment, like the outcomes of university studies, is strongly influenced by the ease of access to courses (low costs, scholarships), the flexibility of programs, the variety of paths offered and their territorial spread. An examination of the flow of people with a tertiary degree summarises a country's ability to increase knowledge-based opportunities for its citizens and to prepare potential future workers with advanced specialised skills. In times of rapid technological innovation, skills in STEM[4] disciplines (science, technology, engineering, and mathematics) become particularly relevant. Despite this, only one in four young people in Europe has a tertiary education degree in these disciplines, and this happens for half as many women as men. The choice to enrol in STEM courses, rather than other tertiary education programs, often depends on secondary school performance, but general societal perceptions and attitudes also come into play.

Across the European Union as a whole, just under 4 million people earned a tertiary degree[5] in 2018. This flow represents 7.7% of people aged 20-29, the reference population conventionally used to measure the intensity of the phenomenon (Figure 5). In Italy, in 2018, about 400 thousand people obtained a tertiary degree for an incidence of 6.4%, growing steadily in recent years (it was 4.2% in 2010).

Figure 5. University graduates and other tertiary degrees by discipline of study in some European countries (a). **Year 2018. Values per 1,000 inhabitants aged 20-29**



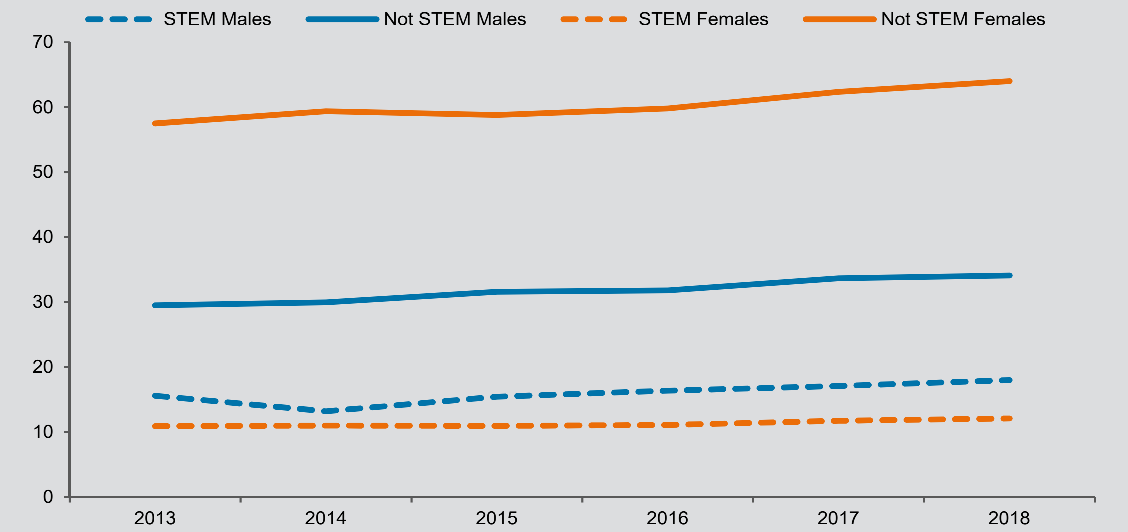
Source: Istat, processing on Eurostat data
(a) The STEM disciplines are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.

4 The New Skills Agenda for Europe proposes in Action 7 to "Increasing STEM graduates and fostering entrepreneurial and transversal skills." STEM skills are critical to driving the twin ecological and digital transitions, and actions taken must increase the attractiveness of studies and careers in STEM fields, with targeted actions to attract girls and women.

5 Tertiary degrees include levels 5-8 of the 2011 Isced International Classification.

More women than men attain a tertiary degree: in Italy, in 2018, there were 231 thousand women compared to 169 thousand men, equal to about 7.6 per 100 women and 5.2 per 100 men, and the growth in the last 5 years has affected both genders (in 2013 there were 6.9 women and 4.5 men per 100) and all disciplines (Figure 6). The difference in the choice of the degree program to follow remains wide: out of 100 women graduates, only 16 obtain a tertiary degree in STEM competences (equal to about 38 thousand women), while out of 100 men graduates those who are in STEM disciplines reach 35 (equal to about 59 thousand men).

Figure 6. Graduates and other tertiary degrees by discipline of study and gender in Italy (a). **Years 2013-2018. Values per 1,000 inhabitants aged 20-29**



Source: Istat, Processing on Ministry of Education, University and Research data
(a) The STEM disciplines are: Natural Sciences, Physics, Mathematics, Statistics, Computer Science, Information Engineering, Industrial Engineering, Architecture and Civil Engineering.

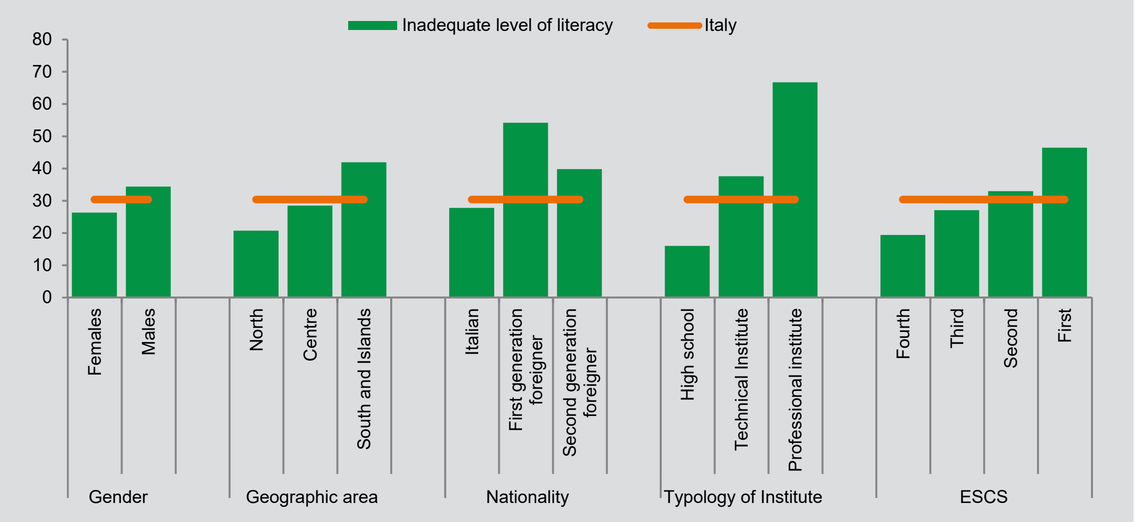
Unequal skills of students by social background

Dropping out of school is only the tip of the iceberg. The difficulty of some young people to continue with their education and training starts early in school and the levels of competence are unequally influenced by certain characteristics: gender, citizenship, socio-economic and cultural status of the family. Inadequate skills are perpetuated over the years and influence school choice, learning, and ultimately the decision to drop out of school. Students of grade 10 in the 2018/2019 school year performing below the baseline level of proficiency in literacy competence are 30.4%, with very wide territorial variations, ranging from 41.9% in the South and Islands to 20.7% in the North. (Figure 7). Inequalities are also wide by gender, social class and citizenship, with 34.4% of inadequate literacy skills among boys compared to 26.3% among girls; 54.2% among first generation foreigners, compared to 27.8% among children born in Italy by Italian parents, and 46.5% among children belonging to the lowest socioeconomic and cultural quartile[6], compared to 19.4% among those

6 In order to measure the socio-economic and cultural status of students, INVALSI constructs, by integrating several variables an indicator called ESCS (Economic Social Cultural Status index), standardised so that the zero value corresponds to the Italian average and each unit above or below it to the standard deviation of the distribution of values. The first quartile corresponds to the score below which 25% of the ESCS scores, in ascending order, are located. The second quartile (or median) is the score below which 50% of the measures are found, and so on.

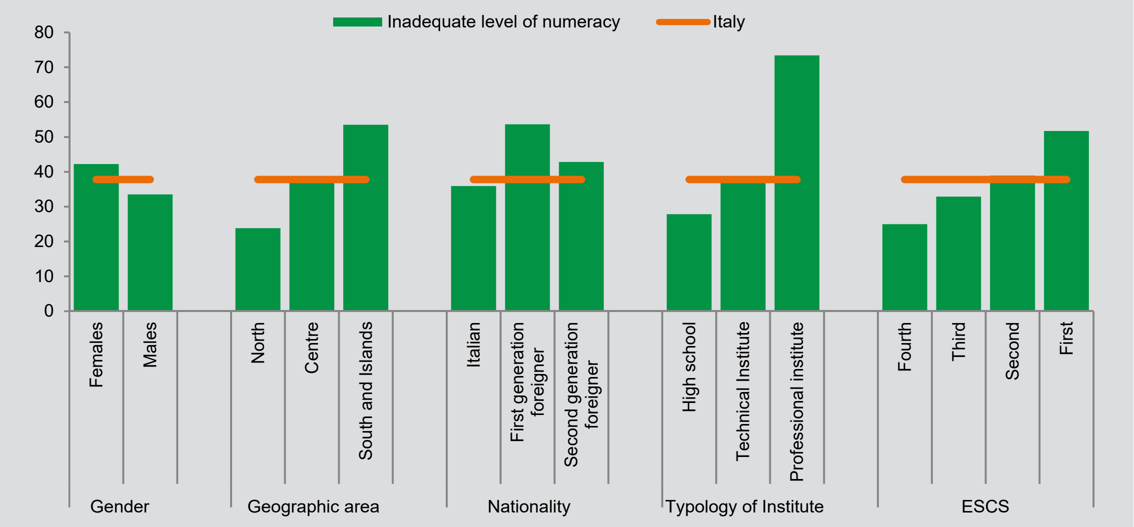
living in more advantaged households. In addition, the percentage of those performing below the baseline level is higher among students in vocational institutions (66.7%) than among students in high schools (16%).
For students of grade 10 in the 2018/2019 school year performing below the baseline level of proficiency in numeracy, the percentages track the same categories but are much higher (37.8). The only exception is the higher proportion of girls with inadequate skills compared to boys 42.2% vs 33.5% (Figure 8).

Figure 7. Students of grade 10 in 2018/2019, performing below the baseline level of proficiency in literacy competence by gender, territory, nationality, typology of institute, ESCS (Economic Social Cultural Status index). Scholastic year 2018/19. Percentage values



Source: Invalsi - Educational national assessment

Figure 8. Students of grade 10 in 2018/2019, performing below the baseline level of proficiency in Numeracy by gender, territory, nationality, typology of institute, ESCS (Economic Social Cultural Status index). Scholastic year 2018/19. Percentage values



Source: Invalsi - Educational national assessment

Apart from these factors[7], it is interesting to analyse which other stimuli can be protective with respect to the risk of not reaching an adequate level of competence in the two subjects, such as: having books, an internet connection and a PC in one's home; having attended pre-school; speaking mainly Italian at home rather than another language.
As a proxy for household cultural level, being able to count on a large presence of books in the home (more than 100 books), is associated with a probability of attaining sufficient competences which is 2.5 times higher than not having books or having less than 25 books. The protective effect of attending pre-primary school is weaker but still significant, with a 34% higher probability of having adequate competences among those who went to pre-primary school compared to those who did not attend. Speaking Italian in the household, even for everyday exchanges, facilitates skills (63% more than for those who habitually speak a language other than Italian). Owning a personal computer and an Internet connection helps in developing skills: 59% more likely than those who do not have a connection and a personal computer.
Among students with a low socio-economic and cultural level[8], having a pc and an internet connection increases the probability of having good skills, more than for students belonging to families with higher socio-economic and cultural levels (69%).

The new challenges of distance learning: internet connection, pc availability and digital skills

In 2020, the school path of students has undergone one of the most profound and sudden transformations, passing from a totally face-to-face teaching to a distance teaching for the last months of the school year 2019/20 and to a mixed teaching (mainly distance for secondary school students) in the first months of the school year 2020/21. Thus, it becomes even more important to have a good connection and a PC or electronic device available to interact with school and teachers. The Istat Survey on students with disabilities in public and private schools, submitted to schools[9] in the 2019/20 school year, showed how schools have equipped themselves in various forms of distance learning[10], but despite the efforts of educational institutions, teachers and families, 8% of children and young people in schools of all levels remained excluded from any form of distance learning and did not take part in video lessons with the class group, a percentage that rises to 23% among students with disabilities.

7 The analysis was performed through a regression model with most of the variables examined here and found to be discriminating for the dependent variable called "learning adequate competences," understood as achieving a sufficient level in both competences (Reading and Numeracy). For definitions of levels, see the 2019 National Invalsi Testing Report https://invalsi-areaprove.cineca.it/docs/2019/Rapporto_prove_INVALSI_2019.pdf (in Italian).

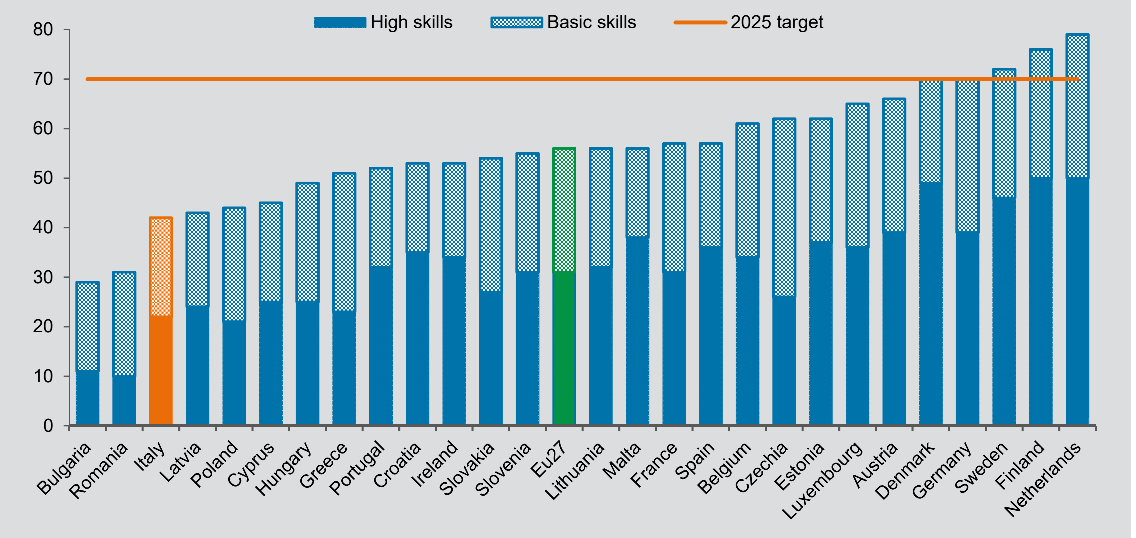
8 Boys from households that fall in the first quartile of the ESCS (see note 6).

9 78.5% of schools responded to the survey. See: https://www.istat.it/it/files//2020/12/Report-alunni-con-disabilità.pdf (in Italian).

10 Distance learning activities involve the reasoned and guided construction of knowledge through an interaction between teachers and pupils. Whatever the medium through which didactics is exercised, the aim and the principles do not change. It takes place through direct or indirect connection, immediate or deferred, by means of videoconferences, video lessons, group chats; the reasoned transmission of teaching materials, by uploading them onto digital platforms and the use of class registers in all their communication and teaching support functions, with subsequent revision and discussion carried out directly or indirectly with the teacher, interaction on systems and interactive educational applications that are strictly digital. The mere sending of materials or the mere assignment of tasks, which are not preceded by an explanation of the content in question or which do not provide for a subsequent clarification or restitution by the teacher, are devoid of elements that can stimulate learning and are therefore not considered part of distance learning.

In this very particular phase of education, having a connection and a PC, besides being a fundamental predictive factor for an adequate development of skills, becomes a requirement for access to education. The impact of distance learning and school closures has, therefore, affected a population of students already crossed by profound inequalities of opportunity and, despite national and local policies, the efforts of educational institutions, teachers and families, the effects on skills and school dropout, especially in the most vulnerable segments of the population, could be particularly serious.
In addition to the availability of computing devices, the sudden and necessary introduction of distance learning has come up against difficulties in the digital skills of the Italian population, an area of particular difficulty comparing to the rest of Europe. In 2019, among individuals aged 16-74, only 22% declared to have high digital skills, i.e., to be able to perform different activities in the 4 domains of information, communication, problem solving and content creation, the percentage is 31% in the Eu27. The majority of individuals have low (32%) or basic (19%) skills, while 3.4% have no skills at all and 24% say they have not even used the internet in the last 3 months. Age remains an important factor: 41.5% of young people aged 20-24 have advanced levels of skills, 36.2% among those aged 16-19; the percentage decreases as age increases and reaches 20.3% among 45-54 year olds and 4.4% among those aged 65-74.
In the New European Commission's Skills Agenda for Europe[11], one of the goals is to have 230 million adults, or 70% of the corresponding EU population, with at least basic digital skills by 2025. This goal has so far been achieved only in the Netherlands, Finland, Sweden, Germany and Denmark; Italy, with 42% of people with high and basic skills, is in the third last country in Europe (Figure 9).

Figure 9. Basic and high digital skills for some European countries and 2025 target. Year 2019. Percentage values



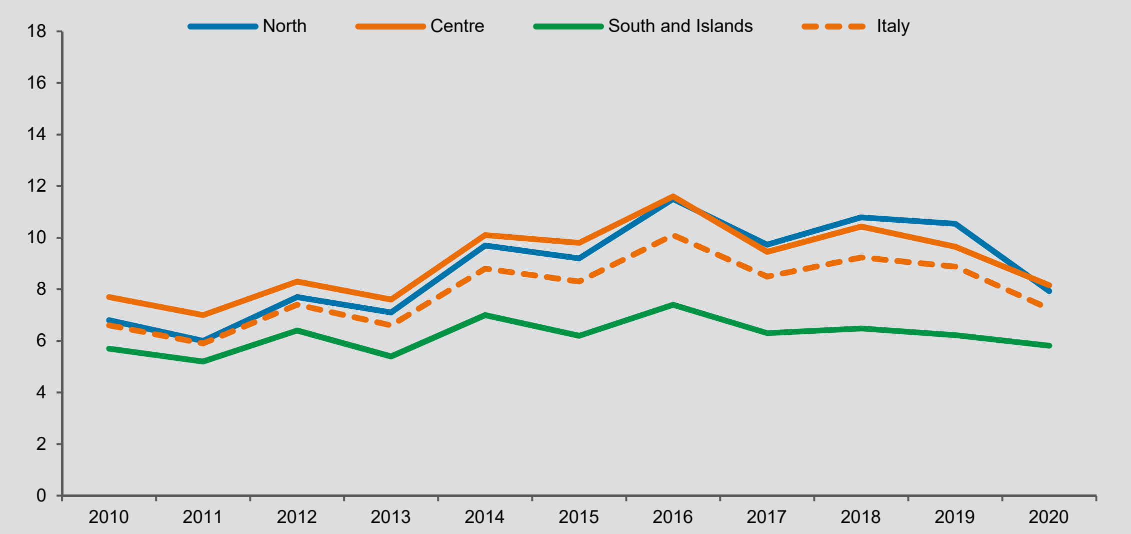
Source: Eurostat, ICT Module

11 The Skills Agenda for Europe, presented in July 2020, and part of the implementations of the European Green New Deal strategy presented in December 2019, proposes in Action 6: "Skills to support the twin transitions (green transition and digital skills for all)" actions to increase digital skills and indicators to monitor their growth. https://ec.europa.eu/social/main.jsp?catId=1223&langId=en.

The setback for lifelong learning

The Skills Agenda indicates, among other things, how lifelong learning must become a reality in Europe. All citizens must have access to attractive, innovative and inclusive learning programs, not least because skills become obsolete very quickly. What will make the difference is lifelong learning, even in old age. However, in Italy, the use of lifelong learning, in the 4 weeks prior to the interview in the Labour Force Survey referring to the second quarter of 2019, reached only 8.9% among the population aged 25-64, compared to a European average of 11.4% (Figure 10). In 2020, the opportunity to participate in learning activities was, also like school, abruptly interrupted, especially in March, April, and May, or partially converted to other ways of delivery. Average participation for Italy fell to 7.2% of individuals; the decline was particularly evident for the North, where the percentage fell from 10.5% in the second quarter of 2019 to 7.9% in the same period in 2020, and for the Centre (from 9.6% to 8.2%).

Figure 10. Participation in lifelong learning for the 25-64 year old population by geographic region. Years 2010-2020 Q2. Percentage values



Source: Eurostat, Labour Force Survey

In other European countries that have imposed closures and restrictions on travel and activities, the share of those who have participated in training activities has also experienced significant declines (Figure 11): this is the case in Denmark (from 25.8% in Q2 2019 to 14.6% in Q2 2020), France (from 20.7% to 7.8%), Sweden (from 35% to 26.5%), Estonia (from 21.7% to 12.9%), Slovenia (from 12.4% to 5.6%), and Austria (from 16% to 9.5%).

Figure 11. Participation in lifelong learning for the 25-64 year old population for some European countries. Years 2019 and 2020 II quarter. Percentage values

Source: Eurostat, Labour Force Survey

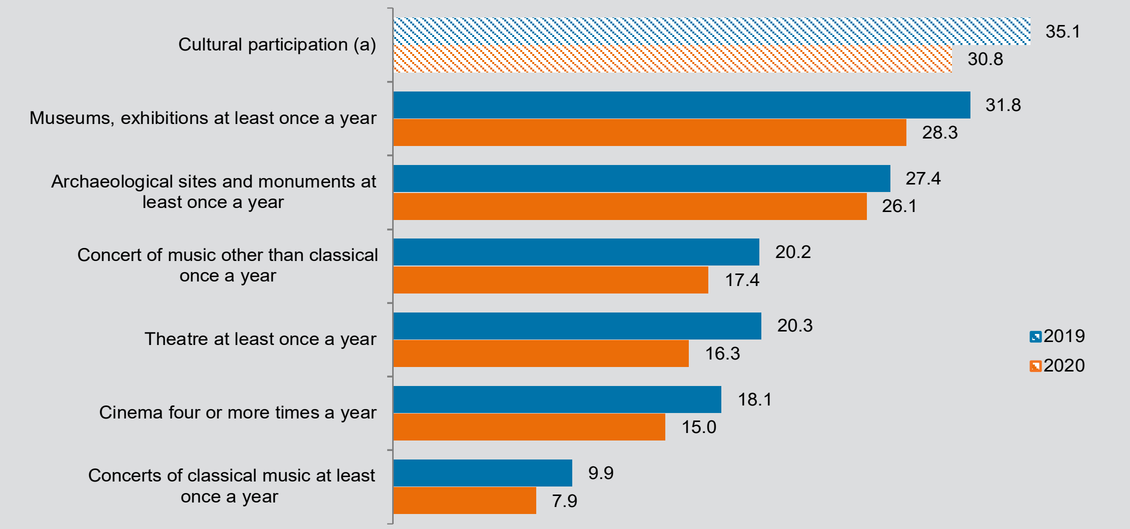
Participation in cultural activities outside the home declines, reading increases

In 2020, the lockdown significantly affected some leisure activities that take place outside the home: the closure of museums, theatres and cinemas, the suspension of concert activities and limits imposed on travel led to a decrease in the share of the population claiming to have enjoyed cultural activities. In contrast to cultural enjoyment outside the home, in 2020, thanks to more time spent inside the home, an upturn in book reading is recorded.

In 2020, the share of people aged 6 and over who engaged in at least two cultural activities outside the home (such as going to the cinema, the theatre or a concert, visiting museums or exhibitions) stood at 30.8%, going down by 4.3 percentage points compared to 2019 (35.1% - Figure 12). The decline is across the Country and it is more accentuated for theatrical performances (-4 percentage points compared to 2019) and visits to museums and exhibitions (-3.5 percentage points). In the face of a decrease in the number of people who say they went to the cinema at least 4 times in the last year (from 18.1% in 2019 to 15% in 2020), there is a significant increase in the share of the population that has the habit of watching movies at home at least weekly, which reaches 69.8% in 2020 (it was 65.1% in 2019).

Cultural participation outside the home is higher among women, compared to men (31.6% vs. 30%), and in the Centre-North (over 34%), compared to the South and Islands (23.3%); it is confirmed to be higher among young people aged 11-24 (about 44%), gradually decreasing in subsequent age groups and going below 9% among people aged 75 and older. Between 2019 and 2020, however, the bigger decreases are observed among the younger segments of the population.

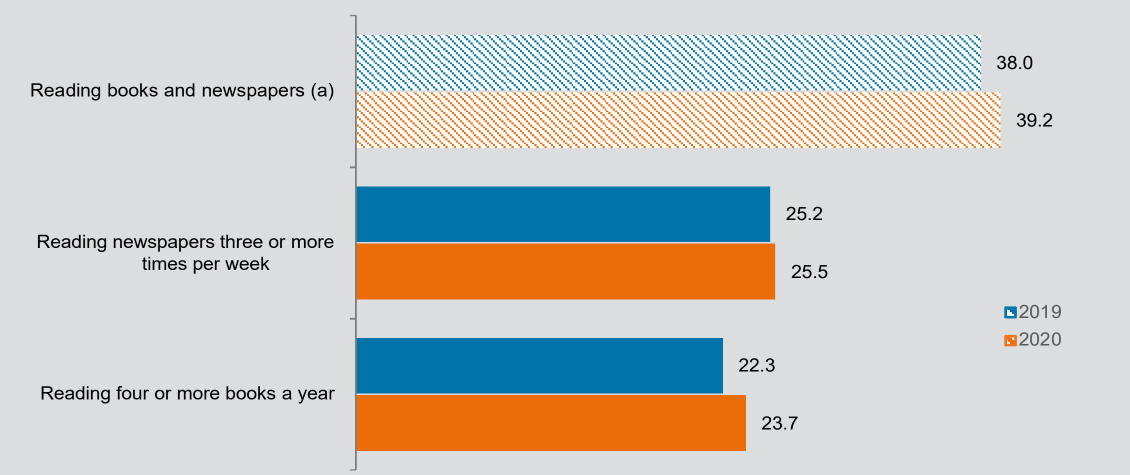
Figure 12. Persons aged 6 years and older who engaged in 2 or more cultural activities outside the home in the 12 months before the interview. Years 2019 and 2020 (b)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) Carried out two or more of the activities shown in the graph.
(b) 2020 data are provisional.

Strong educational qualification-related inequalities in cultural participation outside the home are also confirmed in 2020, with a ratio of about 6 to 1 between the participation of people aged 25 and older with a high educational qualification compared to those with at most a lower secondary school diploma.
Between 2019 and 2020, there is an increase in reading (at least 4 books in the year and/or at least 3 newspapers per week) by about 1 percentage point (from 38% to 39.2%). This increase is due exclusively to the reading of books, which increases from 22.3% to 23.7%, while a substantial stability is observed in the reading of newspapers, which is at around 25% in the two years considered (Figure 13).

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 and 2020 (b)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) Read at least four books a year and/or have read newspapers at least three times per week.
(b) 2020 data are provisional.

Between 2019 and 2020, there is a significant increase in book and/or newspaper reading among women, an increase that brings the percentage of female readers to 39.5%, overcoming, for the first time, the share of male readers (38.8%).
Reading books and/or newspapers is most prevalent among adults aged 35-74: about 4 in 10 individuals engage in this activity in this age group. Between 2019 and 2020, it is above all among adults aged 55-64 that the greatest increase in reading is observed (about 3 percentage points), while there is substantial stability among young people up to 24 years of age and people aged 65 and older.
From a territorial point of view, a strong North-South gradient can be observed, with percentages of readers remaining higher in the northern (47.6%) and central (40.6%) regions and lower in the South and Islands (27%). Compared to 2019, there is stability in the share of readers in both Central Italy and the South and Islands and a significant increase, however, in the Northern regions.

Declining library use

In 2020, 12.8% of the population aged 3 years and older declared that they had been to a library at least once in the last year; the situation determined by the pandemic has certainly affected the share of library users, which decreased between 2019 and 2020 by 2.5 percentage points. This decrease is recorded among users in the North and the Centre of the Country, while it is more contained in the South and Islands and almost exclusively affects young people and those up to 24 years of age. On the other hand, the closure of schools and universities has undoubtedly produced changes in the habits of students that nevertheless present the highest percentage of users, 29.4% in 2020. Starting from the age of 25, on the other hand, library attendance decreases significantly (it is 14% among 25-34 year olds) to drop below 9% after the age of 54.
The prevalence of women who have gone to the library is higher: 14.5% compared to 10.9% among men. The greatest gender gap is found among 15-24 year olds; in this age group, 37.1% of girls report having been to the library, compared to 23.5% of boys.
In 2020, libraries were frequented by a greater number of users in the northern (17.9% of the population) and central (10.9%) regions. The lowest percentages are found in the South and Islands (6.9%). Differences in the use of libraries are certainly also connected to the different distribution of library services throughout the Country, which are more prevalent in the central and northern regions and less so in southern Italy.

Indicators

1. **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: Ministry of Education, Universities and Research
2. **People with at least upper secondary education level (25-64 years old):** Percentage of people aged 25-64 having completed at least upper secondary education (ISCED level not below 3) on total people aged 25-64 years.
   Source: Istat, Labour force survey
3. **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
4. **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, Universities and Research
5. **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
6. **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
7. **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
8. **Inadequate level of literacy (students in grade 10):** Share of students in grade 10 (second year of upper secondary education) performing below the baseline level of proficiency in literacy competence.
   Source: Invalsi, Educational national assessment
9. **Inadequate level of numeracy (students in grade 10):** Share of students in grade 10 (second year of upper secondary education) performing below the baseline level of proficiency in numeric competence (level 2 out of 5 levels).
   Source: Invalsi, Educational national assessment
10. **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
11. **Pupils aged 0-2 years enrolled in early childcare services:** 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
12. **STEM graduates:** Graduates in tertiary education, in science, math., computing, engineering, manufacturing, construction per 1,000 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 on Ministry of Education, University and Research data
13. **Outdoor cultural participation:** 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 AND GEOGRAPHIC AREAS	Participation in the school system of children aged 4-5 (a) 2018/2019	People with at least upper secondary education level (25-64 years old) (b) 2020-Q2	People having completed tertiary education (30-34 years old) (c) 2020-Q2	First-time entry rate to university by cohort of upper secondary graduates (d) 2018	Early leavers from education and training (e) 2020-Q2	People not in education, employment, or training (NEET) (f) 2020-Q2
Piemonte	95.5	63.6	....	52.9	....	19.6
Valle d'Aosta/Vallée d'Aoste	95.7	60.3	....	50.2	....	20.2
Liguria	95.6	68.7	....	55.4	....	24.2
Lombardia	92.7	64.6	....	54.5	....	17.0
Trentino-Alto Adige/Südtirol	96.9	71.4	....	....	....	14.7
Bolzano/Bozen	*96.8*	*71.4*	....	....	....	*12.8*
Trento	*97.1*	*71.4*	....	*51.6*	....	*16.6*
Veneto	94.0	66.0	....	50.2	....	13.3
Friuli-Venezia Giulia	95.6	71.6	....	51.9	....	13.5
Emilia-Romagna	93.2	69.1	....	53.6	....	16.7
Toscana	95.4	64.2	....	51.9	....	18.6
Umbria	95.9	70.9	....	54.9	....	20.0
Marche	95.7	65.6	....	56.1	....	16.7
Lazio	89.1	70.8	....	53.8	....	22.7
Abruzzo	96.9	68.6	....	57.7	....	22.3
Molise	94.5	62.7	....	56.3	....	26.6
Campania	99.2	54.0	....	43.7	....	33.6
Puglia	97.9	52.0	....	48.3	....	31.9
Basilicata	98.8	62.7	....	52.5	....	26.2
Calabria	97.1	54.9	....	49.1	....	39.1
Sicilia	96.1	51.8	....	43.8	....	39.1
Sardegna	96.8	53.7	....	50.1	....	28.3
North	93.9	66.2	30.9	52.5	11.1	16.8
Centre	92.3	68.2	33.0	53.7	12.3	20.5
South and Islands	97.6	54.4	21.7	46.6	16.9	33.9
Italy	**94.8**	**62.6**	**27.9**	**50.4**	**13.5**	**23.9**

(a) Per 100 children aged 4-5;
(b) Per 100 persons aged 25-64;
(c) Per 100 persons aged 30-34;
(d) Specific cohort rate;
(e) Per 100 persons aged 18-24;
(f) Per 100 persons aged 15-29;
(g) Per 100 students in Grade 10;

Participation in life-long learning (b)	Inadequate level of literacy (g)	Inadequate level of numeracy (g)	People with high level of IT competencies (h)	Pupils aged 0-2 years enrolled in early childcare services (i)	STEM graduates (j)	Outdoor cultural participation (k)	Reading books and newspapers (k)	Use of libraries (l)
2020-Q2	2018/2019	2018/2019	2019	2018/2020 (*)	2018	2020 (*)	2020 (*)	2020 (*)
6.5	23.8	28.4	23.6	30.5	14.4	33.9	43.9	15.9
7.4	15.3	28.0	28.3	41.7	9.5	33.8	48.4	24.5
9.5	27.9	34.9	22.0	22.3	16.7	32.9	48.6	12.8
7.6	18.6	22.5	26.6	26.5	14.1	35.5	46.7	18.4
9.5	....	....	25.7	22.9	7.9	39.6	58.1	30.0
6.1	*32.2*	*34.5*	*23.6*	*5.7*	*2.7*	*41.0*	*60.5*	*31.2*
12.8	*16.8*	*15.3*	*27.8*	*43.0*	*13.5*	*38.3*	*55.8*	*28.7*
6.9	16.5	18.5	23.8	34.5	15.6	33.0	46.2	17.2
8.5	21.1	21.9	25.8	27.9	16.2	37.4	53.1	16.8
10.0	24.7	25.8	25.0	33.5	15.4	34.5	50.2	18.3
8.9	30.6	35.0	23.8	42.6	13.3	34.7	42.9	14.5
7.8	28.4	33.2	22.3	32.4	16.0	28.6	37.9	10.8
7.6	25.4	28.6	21.5	27.8	17.6	26.9	34.6	11.2
7.9	28.0	40.8	23.9	33.8	16.3	37.2	41.0	8.5
6.4	31.5	37.8	21.5	20.1	18.2	28.4	35.7	8.2
7.6	37.1	44.3	18.9	27.6	18.9	22.5	28.9	6.2
5.6	42.1	55.5	16.6	19.1	15.2	23.7	22.0	5.6
6.1	39.6	47.8	18.0	26.5	14.5	24.7	26.8	8.1
7.7	39.9	47.3	17.8	17.3	18.0	24.3	24.8	6.8
4.5	47.0	57.7	16.7	17.3	14.4	15.9	21.2	4.1
4.6	43.2	57.1	14.4	24.4	11.5	22.0	26.8	5.8
9.3	46.9	60.5	23.0	28.8	12.8	27.1	45.3	14.7
7.9	20.7	23.8	25.0	29.3	14.6	34.8	47.6	17.9
8.2	28.5	36.8	23.5	35.3	15.5	34.5	40.6	10.9
5.8	41.9	53.5	17.2	22.6	14.2	23.3	27.0	6.9
7.2	**30.4**	**37.8**	**22.0**	**28.2**	**15.1**	**30.8**	**39.2**	**12.8**

(h) Per 100 persons aged 16-74;
(i) Per 100 pupils aged 0-2;
(j) Per 1,000 population aged 20-29;
(k) Per 100 persons aged 6 years and over;
(l) Per 100 persons aged 3 years and over;
(*) Provisional data.

3. Work and life balance[1]

The key elements contributing to people's well-being are having a decent job that is adequately paid, secure, and meeting the skills. Lack of quality employment has a negative impact on the level of well-being, as does an unequal distribution of work commitments, which prevents the reconciliation of work time with family and social life.
Compared with the results achieved on average by European countries, Italy is characterised by a low level of employment rates and a wide gender gap, which is also the result of profound territorial, generational and citizenship inequalities. Women, workers in the South and Islands, young people and foreigners also have a lower quality of work, in terms of instability, low pay, irregularity of contracts and safety at work. These differences widened in the period of the pandemic crisis, through significant negative impacts on employment, especially in the service sector; however, the management of emergencies also stimulated processes of reorganization of work towards a lower level of rigidity and the exploitation of new technological options. Therefore, in the face of the serious collapse in employment, new opportunities have been created for the future with work from home, and new problems with respect to the reconciliation of professional and family life.
The analysis of the Work and life balance domain indicators makes it possible to highlight the old criticalities, which characterise the Italian labour market, and the new aspects that have emerged as a result of the measures implemented to contain the pandemic.

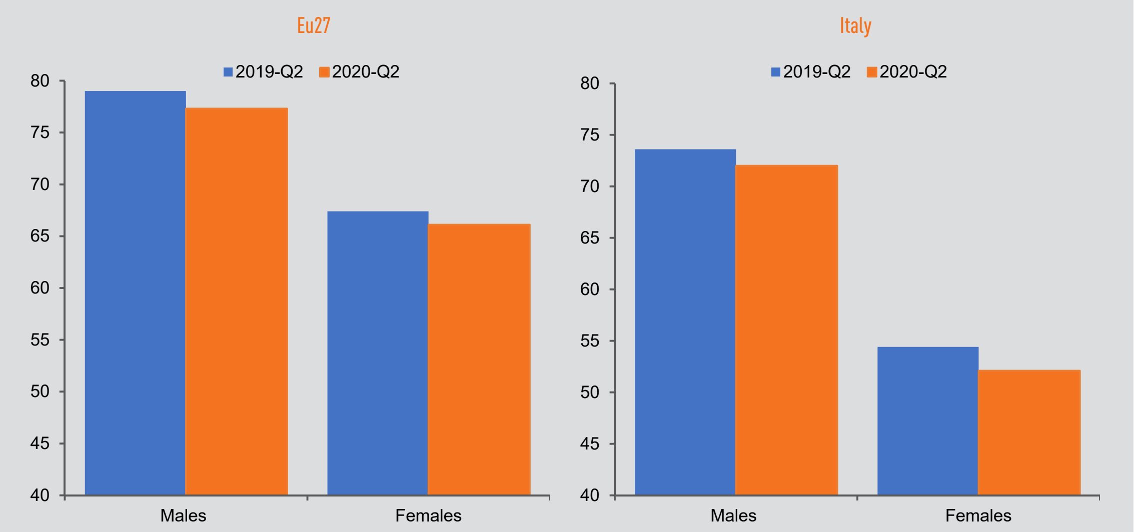
Employment slump in early pandemic months

During 2020 the level of employment underwent an initial drop as early as March (-143 thousand units compared with February), reaching its lowest level in June (-541 thousand). Subsequently, a recovery of 241 thousand employed was observed, bringing employment in November to a level 300 thousand units lower than in February (-1.3%, a particularly low rate if compared with the drop in economic activity levels). The data by type of employment show how the dynamics between February and November 2020 were different, with an increase of 124 thousand units for permanent employees and significant decreases for temporary employees (-332 thousand) and the self-employed (-92 thousand).
This heterogeneity reflects the characteristics of the measures taken to contain the epidemic, the consequent economic evolution and the support policies adopted by the authorities. It has effects on the levels of well-being of the various groups of population, with negative impacts above all on the young and female component of the labour force, which is more characterised by the types of contract that were particularly penalized by the crisis.
Focusing attention on the most acute period of the employment crisis, in the second quarter of 2020 the health emergency led to a sharp drop in the number of employed people in Italy: 788 thousand people aged 20-64 less compared with the previous year's quarter. The employment rate of people aged 20-64 fell to 62%, down 2 percentage points, interrupting the upward trend that had been occurring since 2015.

1 This chapter was edited by Silvia Montecolle, with contributions from: Danilo Birardi, Barbara Boschetto, Tania Cappadozzi, Cristiano Marini, Federica Pintaldi and Maria Elena Pontecorvo.

The negative impact on employment is also evident when looking at EU data. In the second quarter of 2020, the employment rate of the Eu27 average was 71.7%, a drop of 1.5 points compared with a year earlier. As a result, Italy's gap with the Eu27 average widens further to 9.7 points (it was 9.2 points in the second quarter of 2019).
The consequences of the employment crisis, caused by the health emergency, have had repercussions mainly on the most vulnerable components of the labour market (young people, women and foreigners), on the least protected job positions and in the area of the country that already previously showed the most difficult employment conditions, the South and Islands.
The female employment rate, already particularly low compared to other European countries, fell by 2.3 percentage points (52.1%), reversing the growth trend that began in 2015. Also falling, but to a lesser extent, is the male employment rate (-1.6 points), which stands at 72%. As a result, the gender gap, which has always been wider than the European average, increases further: in the Eu27 countries, the male employment rate exceeds the female rate by 11.2 percentage points, while in Italy the distance is 19.9 percentage points (Figure 1).

Figure 1. Employment rate of the population aged 20-64 in Italy and Eu27 countries by gender. Years 2019-2020 II quarter. Percentage values



Source: Eurostat, Labour force survey

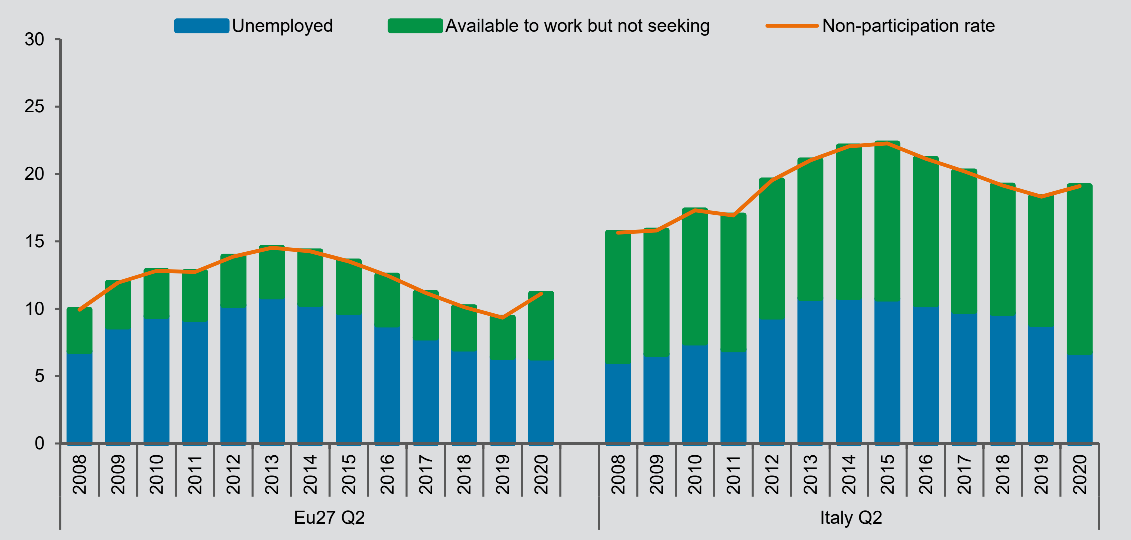
In the South and Islands, the employed aged 20-64 are less than half of the population (47% in the second quarter of 2020), 20 percentage points below the Centre (67.1%) and 24 points below the North (71.2%). However, the decline in the employment rate has been across the whole Country. It decreases, in fact, in the North (-2 points) in the Centre (-1.6 points) and in the South and Islands (-2.1 points), although for the latter the change is proportionally more marked.
The crisis has affected the employed independently of the educational qualification but, again, the loss has been more marked, proportionally, for those with a lower level of education. The employment rate fell by 2 percentage points for those with at least a bachelor's degree (78%), by 2.3 points for those with a upper secondary school diploma (64.2%) and by 1.7 points for those with a lower level of education (50.9%). Age and citizenship are the variables that determine a greater heterogeneity in the observed drop: young people are the

most affected, with more than 3 percentage points of decrease among both those aged 20-24 (-4 points, 29.1%) and those aged 25-34 (-3.5 points, 59.2%). Among foreign citizens, the employment rate fell by 5.5 percentage points and for the first time became lower than that of Italians (59.3% compared with 62.3%). In this case, the sharp drop was primarily due to the employment rate of foreign women, which underwent a marked contraction (-6.2 points, 45.5%) and moved further away from that of employed women with Italian citizenship (52.9%); however, the reduction also involved the employment rate of foreign men (-4.4 points, 75.4%), which nevertheless remains higher than that of Italians (71.6%).

The increase in inactivity and the decrease in unemployment

The non-participation rate measures the unsatisfied job offer, including in the numerator, in addition to the unemployed, also those who are available to work despite not having carried out active research actions. In the second quarter of 2020, this rate was 19.1%, +0.8 points compared to the second quarter of 2019. The European figure is lower (11.1%), but shows a larger increase than the Italian one (+1.8 points). Both in Italy and for the Eu27 average this is essentially due to the increase in the weight of people who are not looking for work, but are available. However, while in the Eu27 average the unemployed component remained stable, in Italy the share of unemployed fell by 2.1 points (Figure 2).

Figure 2. Non-participation rate of the population aged 15-74 and its components in Italy and Eu27 countries. Years 2008-2020 II quarter. Percentage values



Source: Eurostat, Labour force survey

Also in this case inequalities tend to widen, with more consistent increases in non-participation in employment in the population groups with most critical conditions. The rate increased more for women (+1.1 points, 22.8%) than for men (+0.6 points, 16.2%), for young people up to 34 years of age (+2.6 points, 31.7%) and in southern Italy (+1.4 points, 34.5%), where non-participation is three times higher than in the northern regions.
The limitations linked to the lockdown period made it more difficult to undertake active search actions, or to be available for work in the following two weeks, due to the effect of the incre-

ased family loads (especially for women with children following the closure of schools), the lack of activity in many productive sectors and the strong limitations on travel. Therefore, even those who were actively seeking work before March, in many cases stopped looking due to the health emergency. The same considerations led to the decline in the potential labour force in general, i.e., inactive persons who actively seek work and are not available or do not actively seek work despite being available. Part of the share of the unsatisfied supply has therefore been added to that of the inactive. From the flow data, between the second quarter of 2019 and the second quarter of 2020, one year apart, both the transitions from unemployment to inactivity increased (52.8%, +13.5 points), as did those from the potential labour force to inactive who are not looking for work and are not available to work (34.3%, +2.3 points).

Job loss of temporary workers

The quality of work in Italy has for some time been critical in terms of stability, regularity, remuneration and consistency with the skills acquired in the training system. This is partly due to the economic trend of the labour market, worsening in phases of crisis, and in part to structural characteristics.

Flow data, calculated between the second quarter of 2019 and the second quarter of 2020, show a strong decrease in temporary employment one year later. Among temporary employees and contractors, there is a significant exit from employment (-8.5 points) and an increase towards unemployment (+1.5 points) and, above all, towards inactivity (+6.9 points). Among those who remained in the employed condition, the rate of transition from temporary employee or collaborator to permanent employment remained unchanged. From flow data calculated between the second quarter of 2020 and the same quarter of the previous year, 22.3 percent (+0.3 points) of temporary workers (including contractors) transitioned to permanent employment. The decline in employment in the second quarter of 2020 was primarily due to a decrease in term employees, whose incidence fell from 13.3% in the second quarter of 2019 to 10.8%.

The sectors most affected by the health emergency were precisely those where temporary employment is more widespread, such as commerce, hotels and restaurants and private family services; the latter sector, which has definitely felt the effects of the pandemic, also due to the significant presence of non-regular workers. In order to cope with the crisis, social shock absorbers and the freezing of layoffs made it possible to contain employment, but the suspension of activities has jeopardized the start-up of new employment relationships, especially those with temporary contracts and their possible extensions.

Among temporary workers and collaborators, about 500 thousand employed have been in temporary jobs for at least five years, a sign of persistence in a condition of job insecurity. The percentage of long-term temporary workers increased from 17.6% to 18.7% in the second quarter of 2020. Again, however, the increase was due to a reduction in the number of term workers in general, while long-term term workers were able to retain their jobs largely than others. The increase in the rate is most evident among the over-55s, where the share of workers who have been in temporary employment for at least 5 years is highest. In the southern regions, conditions are worse, with a greater diffusion of long-term precariousness. The rate of the long stay in the condition of instability recorded in the second quarter of 2020 is 23.6% in the South and Islands (+0.8 points compared to the second quarter of 2019), 18.5% in the Centre and 15% in the northern regions.

A particularly critical situation is likely to be that of irregular workers, for which, however, no figures are yet available for 2020.
According to estimates made within the framework of the National Accounts, in 2018 non-regular workers in Italy represented 12.9% of total employment, with a higher incidence in the South and Islands (17.9%). In the particular situation following the spread of the epidemic, this group of workers is a particularly weak segment of the labour market, more exposed to risks due to the difficulty of access to social safety nets and the inability to formally justify in the lockdown the movements for work reasons. This is also because of a high presence of non-regular workers in sectors particularly affected by the crisis such as tourism, catering and hotels.

The increase in low hourly wage employees

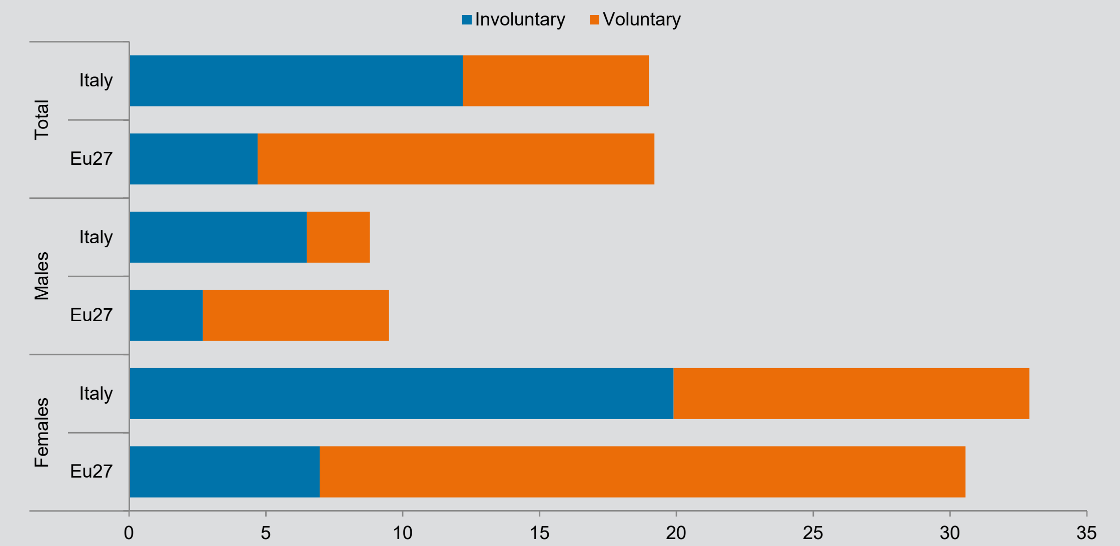
In terms of pay, the incidence of low-payed employees (hourly wages of less than 2/3 of the median hourly wage) increases: in the second quarter of 2020, they are the 12.1% of employees (it was 9.6%). The percentage is higher among women (13.8%, +2.5 points) than men (10.7%, +2.6 points) and among younger age groups: almost 28% among 15-24 year olds (-1.3 points) and 16.3% among 25-34 year olds (+2.8 points); the highest increase, however, is recorded for the middle age group, 35-44 years, where the share reaches 11.5% (+3.7 points). The South and Islands record the highest incidence (16.4%), but the figure is stable when compared with the second quarter of the previous year (down 0.2 points), while the Centre (13.2%) and the North (9.6%) registered a greater increase, up 4.2 and 3.3 percentage points, respectively, thus reducing the territorial gaps. The proportion of low-wage workers increased the most in the hotel and restaurant sector (35.4%, +14.8 points), in commerce (16.3%, +6 points) and in construction (16%, +7.4 points), and among blue-collar workers (13.2%, +5.3 points) and white-collar workers in commerce and services (17%, +3.8 points), while the proportion remained stable but very high among unskilled occupations (22.2%, -0.1 points).

The underutilisation of employed human capital

Two indicators highlight the serious underutilisation of human capital among the employed in Italy: the percentage of over-qualified workers, who work in an occupation despite having a higher qualification than that held by the majority of people in the same profession, and the percentage of people employed in a part time job despite wanting to work full time. The first indicator, slowly but steadily growing over time, is about 25% of the employed in the second quarter of 2020, stable compared to the same quarter of 2019, but it goes up to almost 38% among workers aged 25-34 and to almost 30% among those aged 35-44. This means that the younger generation, in addition to succeeding with difficulty in finding employment, are in some cases employed in occupations that are not appropriate to their level of education.
The situation is also serious in relation to involuntary part-time, i.e. the proportion of employed persons who have a part-time employment relationship not by choice, but because they have adapted to the conditions dictated by the demand for work. In the second quarter of 2020 the proportion of involuntary part-time workers was 11.7% (down 0.6 points) and

tends to involve more women (19.3% compared with 6.2% of men) and young people up to the age of 34 (21.5% up to the age of 24 and 15.3% between 25 and 34). The percentage of involuntary part-time workers grew steadily from 2004 until 2015 and then stabilised at around 12%, highlighting the chronic nature of this segment of the labour market.
Involuntary part-time work is a peculiarity of the Italian labour market: compared with a percentage of part-time workers that is equal to the European average, the involuntary share in Italy is more than double (Figure 3). Among women, the gap with Europe is almost 13 percentage points.

Figure 3. Involuntary and voluntary part-time workers in Italy and Eu27 countries. Year 2019. Percentage values

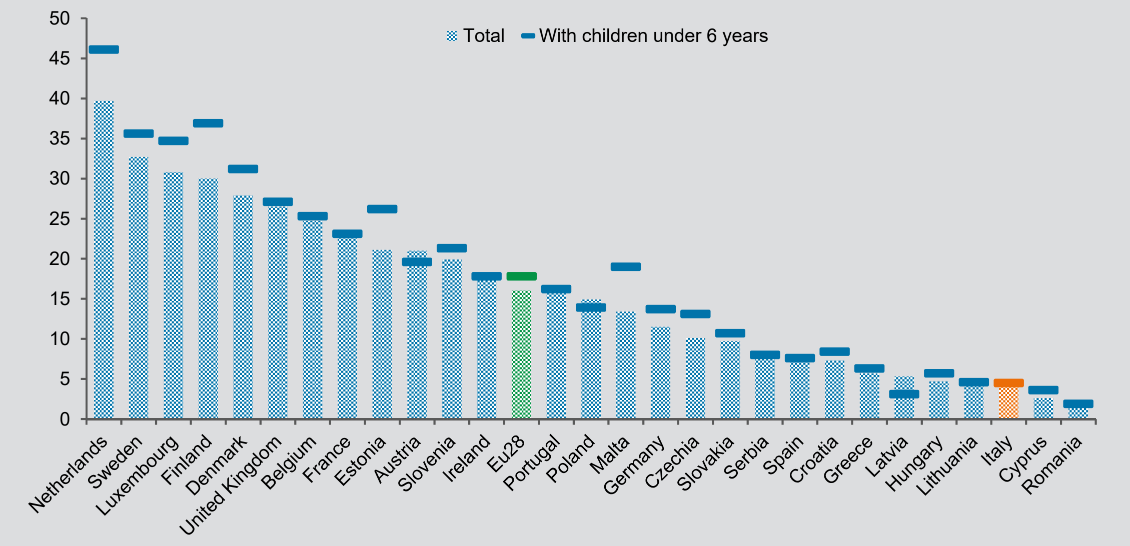


Source: Eurostat, Labour force survey

The increase in work from home

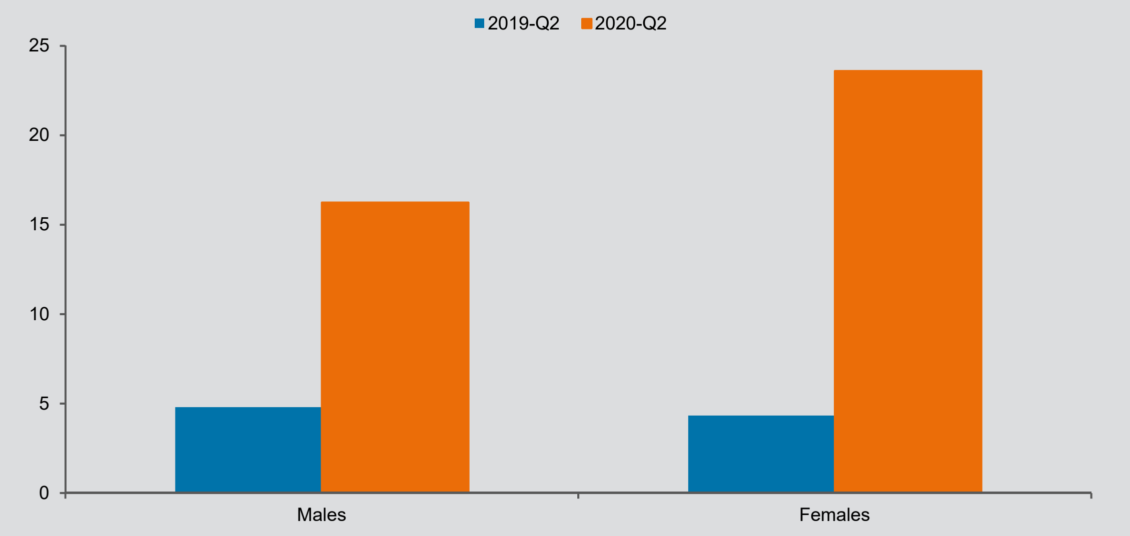
Alongside the many negative aspects on the labour market front, the pandemic has opened up new opportunities with the surge in work from home. Prior to the epidemic, working from home in Italy involved a very limited segment of workers, placing us in the third last place in Europe (Figure 4). Moreover, the share of women working from home was very similar between employed women (4.3%) and employed women with a child under 6 years of age (4.5%), while in other European countries, such as the Netherlands and Finland, women with pre-school children had a share at least 6 percentage points higher than the average employed woman.
In March 2020, the health emergency imposed in many sectors the sudden shift to working from home as an indispensable tool to continue productive activities and reduce public health risks. As a result, in the second quarter of 2020 the share of employed people who have worked from home at least one day a week reached 19.3% (from 4.6% in the second quarter of 2019), rising to 23.6% among women (Figure 5). The increase was caused by an extraordinary situation that led to an obligatory experimentation of this flexibility model, showing its potential and weaknesses. Once the emergency is over, this experience - in many cases even problematic, especially for women with children - can represent a valuable trial of new ways of organizing work.

Figure 4. Employed women 15-64 year olds working from home: total and with children under 6 years. Year 2019. Percentage values



Source: Eurostat, Labour force survey

Figure 5. Employed persons who worked from home by gender. Years 2019-2020 II quarter. Percentage values



Source: Eurostat, Labour force survey

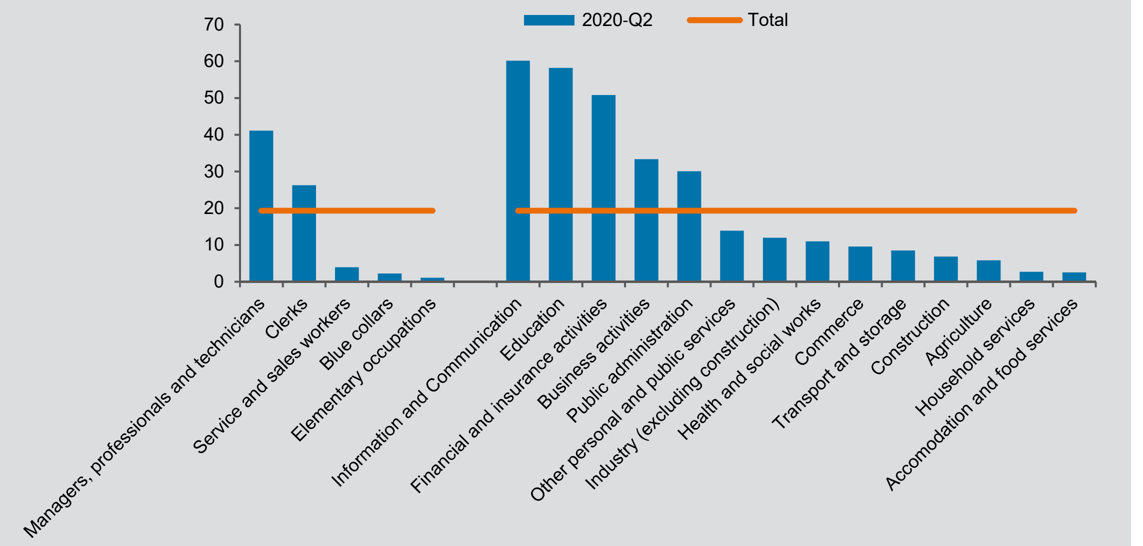
The largest share of employed persons who worked from home is observed in the Centre (21.9%), followed by the North (20.4%) and the South and Islands (15%). The differences depend on the different distribution of sectors of economic activity in the territories, but also on the heterogeneity in the territorial distribution of IT equipment and digital skills, necessary to start this type of activity.

In some sectors and for some occupations, incorporating work from home into the organisation of productive activities has been an easier step to take than in others (Figure 6).

With regard to occupation, the rate have exceeded 40% in the most highly qualified occupations and 25% in clerks, while it is marginal in all the remaining categories.

At the sector of economic activity level, the information and communication sector, where the rate was already higher than average in the second quarter of 2019 (12.7%), it reached 60%; this was followed by the education sector, where the share of employed persons who worked from home was 58.2%, and the financial and insurance sector, where it slightly exceeded 50%. Significant percentages also characterised services and business support activities (33.3% for real estate, scientific and technical professional activities, and rental activities), which, like the information and communication sector, had an above-average rate already in the second quarter of 2019 (13.2%), and the public administration (30.1%).

Figure 6. Employed persons who worked from home by occupation and economic activity. Year 2020 II quarter. Percentage values



Source: Eurostat, Labour force survey

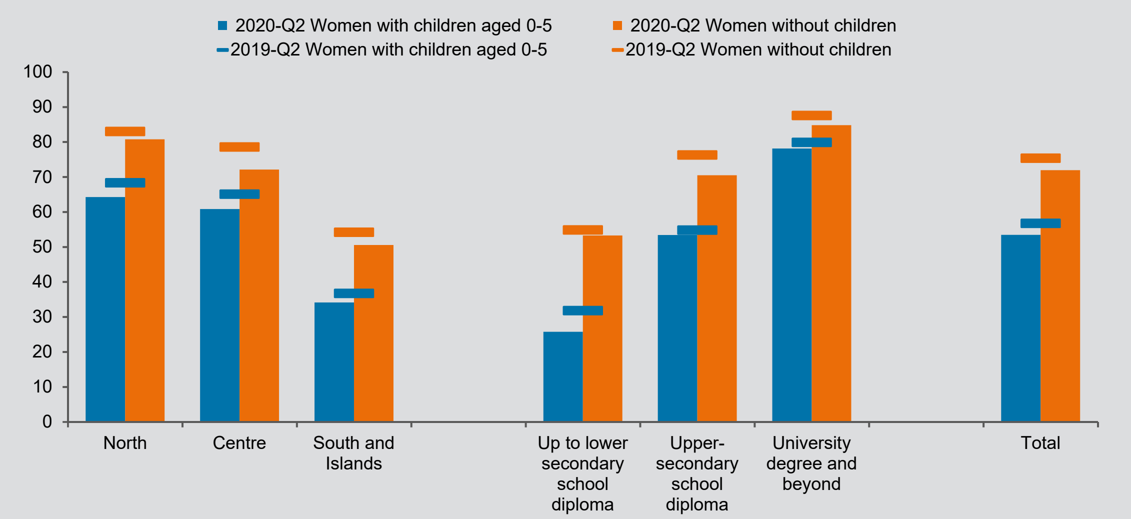
Employed women with young children more penalised than those without children

During the second quarter of 2020, in the midst of a health emergency, the problems of reconciling work and life times also changed. In cases where it has been possible to work from home, this was joined with the need for children to do their distance schooling, sometimes creating a problem of overlap in the same time slots of work time and childcare, especially for mothers who maintain the majority workload of caregiving. When, on the other hand, there were no alternatives to work in presence, the disappearance not only of formal services, but also of informal ones, such as fostering with grandparents, led to great difficulty in managing family needs in parallel with those of work.

In Italy, the disadvantage of employed mothers is evident. The presence of children, especially those in pre-school age, has a relevant impact on women's participation in the labour market. Considering women between the ages of 25 and 49, in the second quarter of 2020, the employment rate drops from 71.9% for women without children to 53.4% for those with at least one child under the age of 6. The ratio of the employment rate for women aged 25-49 with preschool-age children to women without children (multiplied by 100) is less than 100 (the value that would be the case if the two rates were equal) by about 25 percent, 1 point lower than in the second quarter of the previous year.

The situation of greatest difficulty in the labour market for women with young children is observed in southern Italy (where only 34.1% of women with young children work, compared with 60.8% in central Italy and 64.3% in the North). Changes in the ratio from the previous year's quarter are due to decreases in both the employment rates at numerator and denominator (Figure 7). In the South and Islands, the ratio of the rate of working mothers to the rate of employed women without children is 67.5, stable compared to the second quarter of 2019 (-0.2 points) because both components are decreasing by similar amounts. In the Centre it is 84.4, increasing (+1.5) because the rate of employment of women without children has decreased more, and in the North it is 79.6, decreasing (-2.8) because the decline in the rate of women with children is more pronounced.
The female disadvantage decreases as the level of education increases: the ratio exceeds 92 for employed mothers with at least a university degree compared with childless women with the same educational qualification, it decreases to 75.8 for employed women with a upper secondary qualification while it falls below half (48.3) for those with a lower educational qualification. In the latter case, compared to the second quarter of 2019, the ratio declines by 9.6 points (Figure 7), as the employment rate for less educated mothers declines more.

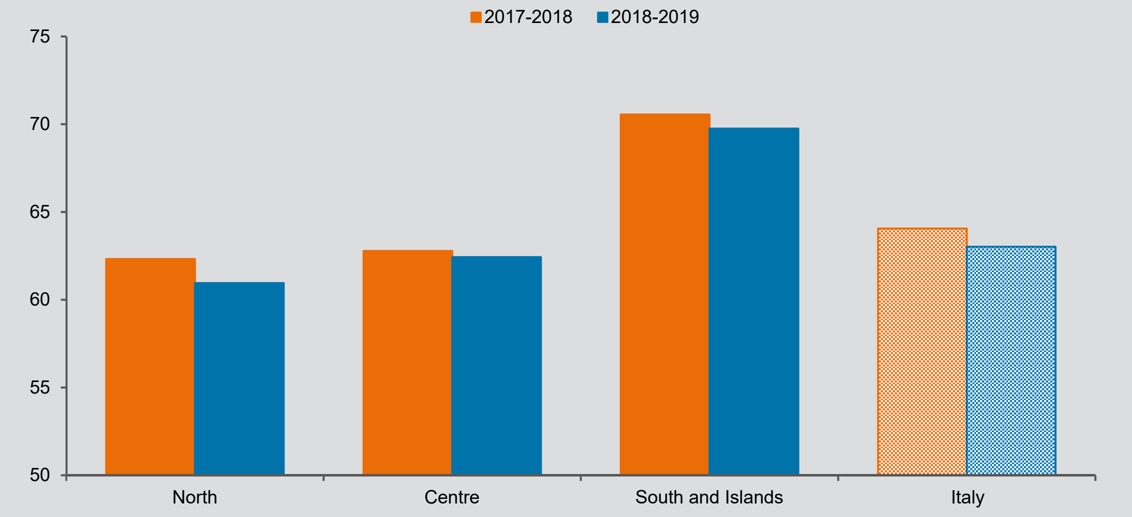
Figure 7. Employment rate of women aged 25-49 with at least one child aged 0-5 and employment rate of women aged 25-49 without children. Years 2019 and 2020 II quarter. Percentage values



Source: Eurostat, Labour force survey

Reconciling work and lifetime is a fundamental objective for the well-being of men and women, but in Italy it appears difficult to find a balance.
Among the reasons that complicate the achievement of this goal there is a distribution of domestic and care work within the family still unbalanced to the detriment of women, which forces them more often to reshuffle their non-domestic activities in function of care work. In the 2018/19 period, the percentage of family workload carried out by women aged 25-44 out of the total family work time carried out by couples in which both are employed (asymmetry index) still stands at 63%, although the index tends to decrease compared to the previous two-year period. The percentage is higher in the South and Islands (69.7%) than in the North (60.9%) and the Centre (62.4%) (Figure 8).

Figure 8. Family work asymmetry index in couples with a 25-44-year-old woman by geographic area. Years 2017-2018 and 2018-2019 (a). Percentage values



Source: Istat, Time use survey and Survey on Aspects of daily life
(a) Provisional data

Satisfaction gap between employed and self-employed increases, sense of job insecurity grows

Considering the scores for the various aspects that make up the summary index of job satisfaction (earnings, number of hours worked, working relationships, job stability, distance between home and work, interest in work), in the second quarter of 2020, 55.7% of employed persons gave average scores of between 8 and 10. A percentage that was around 2 points higher than the 53.9% recorded in the same quarter of the previous year. The percentages of those very satisfied with commuting time (the higher number of employed people who worked from home certainly affected the rating) and with the interest in the work performed, but also with hours and earnings are the highest. However, the percentage of those reporting a score below 6 also increased by 0.8 percentage points (5.6% in Q2 2020). The average figure for job satisfaction thus shows no difference from the comparable quarter of the previous year. The workers' perception of their condition appears positive overall: on a scale of 0 to 10, job satisfaction is 7.5. With respect to the various elements that make up the average, the evaluation is above 7 for all dimensions, with the exception of one's earnings, for which the average judgment is 6.7.
An increase in the percentage of the very satisfied emerges for employees, both permanent (61.5%, +2.2 points) and temporary (44.3%, +4.9 points), but not for the self-employed, for whom the proportion of those very satisfied decreases, especially for those with employees (48%, -6.7 points). The decrease is due, in particular, to low scores for the earnings and job stability dimensions, but also for working hours. Thus, the gap between the average scores of permanent employees (7.7 the average in Q2 2020, was 7.6 in the same period of 2019) and self-employed with employees (7.2 in Q2 2020; was 7.5) increases.
The insecurity caused by the pandemic has increased, in the second quarter of 2020, the percentage of workers who perceive themselves as very vulnerable, i.e., they believe that, in the next 6 months, it is likely to lose their current job and it is little or not at all likely to find

another similar one. This percentage, which became equal to 7.8% (+1.9 points compared to the second quarter of 2019), represents a reversal of the trend of steady decline recorded in recent years, with about 400 thousand more employed people who are strongly afraid of losing their job without having the opportunity of replacing it (for a total of almost 1 million 800 thousand employed people).

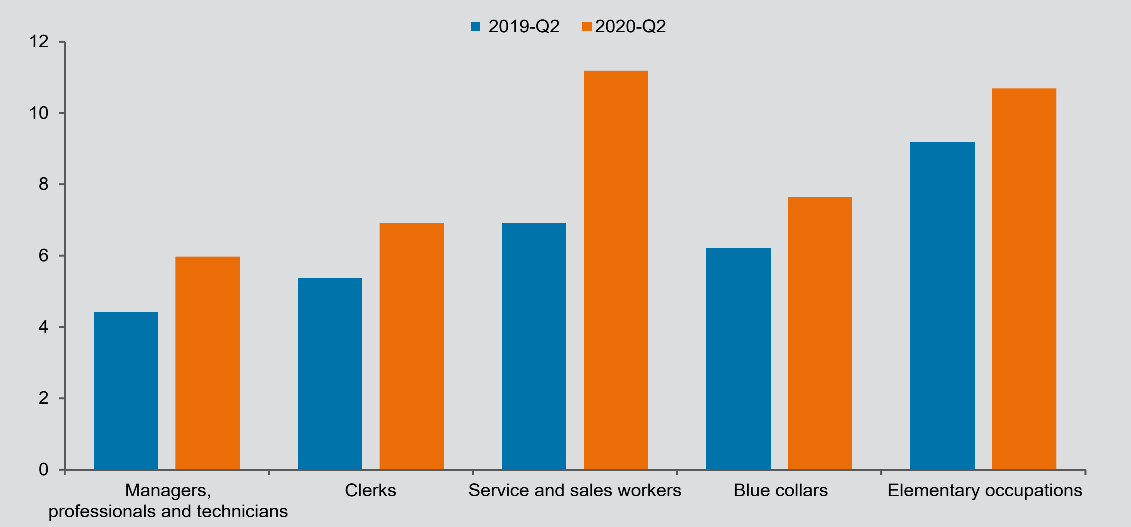
It is the most fragile categories in the labour market that are most afraid of losing their jobs and consider it difficult to find another one. Women feel more vulnerable than men (8.8% compared with 7.1%) and even the growth, compared with the same quarter of the previous year, is more marked for them (+2.6 points) than for men (+1.5 points).

The perception of insecurity in employment appears heterogeneous on the territory: it is higher in the South and Islands (9.4%) than in the Centre (7.6%) and in the North (7.1%), but the increase was higher in the North and the Centre (+2.2 and +2 points, respectively) than in the South and Islands (+1.4 points). The highest proportion of people who perceive themselves as vulnerable is recorded among young people (10.1%), although the distance with the other age groups decreases in the second quarter of 2020 because of the greater increase among people aged 35 years and over (+2 points).

The feeling of insecurity has increased particularly for certain occupations. The percentage remains high among those in unskilled occupations (10.7% in Q2 2020), but the largest increase between Q2 2019 and 2020 occurred among those in service and sales workers (from 6.9% to 11.2% - Figure 9). The share has always been high among fixed term employees, but in Q2 2020 it reached as high as 26.6% (+2.5 points), and there was also a sharp increase among the self-employed, both without employees (9.4%, +3.9 points) and with employees (6.6%, +3.8 points).

In terms of sectors of economic activity, there was an increase in terms of insecurity in many, but the share of those employed in the accomodation and food services sector doubled from the previous year's quarter (8.3%) to 17.8%. The only sectors where there was no increase in the percentage were agriculture (8.9%, -2 points), public administration (1.9%, -0.5 points) and household services (7.8%, 0.3 points).

Figure 9. 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 employment profile. Years 2019 and 2020 II quarter. Percentage values



Source: Istat, Labour force survey

Decline in accidents at work

The incidence rate of fatal occupational injuries or injuries leading to permanent disability, which provides an indication of another important aspect for evaluating the quality of employment, has been slowly and progressively decreasing over the years. This is a consequence of the progressive transformation of the production system towards less risky jobs and greater regulatory attention to worker safety. In 2018, the rate of fatal accidents and permanent disability was 11.3 per 10,000 employed persons, decreasing from 2017 when it was 11.9. The reduction affects all areas of the country: in the South and Islands the rate is 13.6 per 10,000 employed (-0.6 points), compared to 11.8 in the Centre (-0.7 points) and 10 in the North (-0.5 points). It is higher among men (15.2 per 10,000 employed), those over 50 (16.6 per 10,000 employed between the ages of 50 and 64 and 27.7 per 10,000 employed among the over 65s) and foreigners (14.7 per 10,000 employed).

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, multiplied by 100:** 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. **Share of employed persons who feel satisfied with their work:** The indicator is built as the average level of satisfaction (using a scale from 0 to 10) in more than one dimension: earnings, number of hours worked, relations with others in the work place, 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 AND GEOGRAPHIC AREAS	Employment rate (20-64 year-olds) (a) 2020-Q2	Non-participation rate (b) 2020-Q2	Transition rate (12 months time-distance) from non-standard to standard employment (c) 2018/2019	Share of employed persons with temporary jobs for at least 5 years (d) 2020-Q2	Share of employees with below 2/3 of median hourly earnings (e) 2020-Q2	Share of over-qualified employed persons (f) 2020-Q2	Incidence rate of fatal occupational injuries or injuries leading to permanent disability (g) 2018	Share of employed persons not in regular occupation (f) 2018
Piemonte	68.8	13.2	25.3	....	....	....	7.9	10.2
Valle d'Aosta/Vallée d'Aoste	70.7	11.5	10.7	....	....	....	10.1	9.6
Liguria	65.8	14.6	19.0	....	....	....	14.5	11.6
Lombardia	71.6	9.8	31.4	....	....	....	7.6	10.4
Trentino-Alto Adige/Südtirol	73.6	8.8	22.2	....	....	....	11.8	9.4
Bolzano/Bozen	*75.5*	*7.0*	*21.9*	....	....	....	*13.3*	*8.9*
Trento	*71.8*	*10.6*	*22.5*	....	....	....	*10.2*	*10.0*
Veneto	70.9	10.1	32.5	....	....	....	12.2	9.0
Friuli-Venezia Giulia	71.4	11.2	21.0	....	....	....	8.9	10.0
Emilia-Romagna	73.8	8.9	24.6	....	....	....	13.3	9.8
Toscana	70.7	12	27.2	....	....	....	15.3	10.8
Umbria	67.3	14.7	21.3	....	....	....	16.7	13.3
Marche	69.4	12.9	23.0	....	....	....	15.9	10.5
Lazio	64.4	16.5	17.8	....	....	....	7.6	15.5
Abruzzo	61.5	17.4	22.1	....	....	....	17.0	14.8
Molise	57.3	25.1	12.6	....	....	....	13.6	15.3
Campania	43.3	37.7	12.9	....	....	....	10.3	19.4
Puglia	49.4	32.1	11.2	....	....	....	12.6	16.1
Basilicata	54.0	26	11.8	....	....	....	23.2	14.2
Calabria	42.9	39.3	9.2	....	....	....	17.1	22.1
Sicilia	43.0	40.1	12.5	....	....	....	13.8	18.7
Sardegna	55.4	26.4	19.9	....	....	....	15.6	15.7
North	71.2	10.5	27.7	15.0	9.6	23.3	10.0	10.0
Centre	67.1	14.5	21.6	18.5	13.2	27.3	11.8	13.3
South and Islands	47.0	34.5	13.3	23.6	16.4	25.9	13.6	17.9
Italy	**62.0**	**19.1**	**21.8**	**18.7**	**12.1**	**24.9**	**11.3**	**12.9**

(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.
(f) Per 100 employed.
(g) Per 10,000 employed.

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) 2020-Q2	Share of employed people aged 15-64 years working over 60 hours per week (including paid work and household work) (f) 2013/2014	Share of household work time carried out by women in a couple on the total of the household work time (i) 2018/2019	Share of employed persons who feel satisfied with their work (l) 2020-Q2	Share of employed persons who feel their work unsecure (f) 2020-Q2	Involuntary part time (f) 2020-Q2	Employed persons working from home (f) 2020-Q2
....	51.3	....	7.6	....	....	....
....	47.0	....	7.8	....	....	....
....	51.7	....	7.4	....	....	....
....	51.8	....	7.5	....	....	....
....	53.7	....	8.0	....	....	....
....	*54.6*	....	*8.1*	....	....	....
....	*52.7*	....	*7.9*	....	....	....
....	51.9	....	7.4	....	....	....
....	51.7	....	7.6	....	....	....
....	49.4	....	7.5	....	....	....
....	52.1	....	7.5	....	....	....
....	52.8	....	7.8	....	....	....
....	53.1	....	7.6	....	....	....
....	48.0	....	7.5	....	....	....
....	47.1	....	7.4	....	....	....
....	50.6	....	7.8	....	....	....
....	47.8	....	7.2	....	....	....
....	45.1	....	7.3	....	....	....
....	48.6	....	7.1	....	....	....
....	49.4	....	7.2	....	....	....
....	38.7	....	7.3	....	....	....
....	49.8	....	7.6	....	....	....
79.6	51.4	60.9	7.5	7.1	9.8	20.4
84.4	50.3	62.4	7.5	7.6	13.2	21.9
67.5	45.6	69.7	7.3	9.4	14.1	15.0
74.3	**49.6**	**63.0**	**7.5**	**7.8**	**11.7**	**19.3**

(h) Per 100.
(i) Per 100 persons aged 15-64.
(l) Average satisfaction on a scale from 0 to 10.

4. Economic well-being[1]

Italian households have traditionally been characterised by a high propensity to save combined with widespread home ownership and limited recourse to debt. However, the economic crisis that characterized a long phase of the last decade has shown the limits of this model, accentuating inequalities and territorial differences. In the years 2018 and 2019, positive signs in the growth of employment rate, reduction of absolute poverty and severe deprivation, increase in income and purchasing power of households, also thanks to the strengthening of income support interventions, confirmed an improvement in the economic conditions of the country. In this context, the outbreak of the COVID-19 pandemic has affected the Italian economic system in alarming and unpredictable forms and intensity, with a collapse in levels of economic activity that has had negative effects on income and purchasing power and a wider fall in consumer spending. The increase in poverty has been concentrated on certain segments of the population and certain territories. Despite improving economic conditions in the summer months of 2020, the COVID-19 pandemic continues to negatively affect household economic well-being in the latter months of 2020.

Income, purchasing power, consumption expenditure and savings: households' response to the pandemic

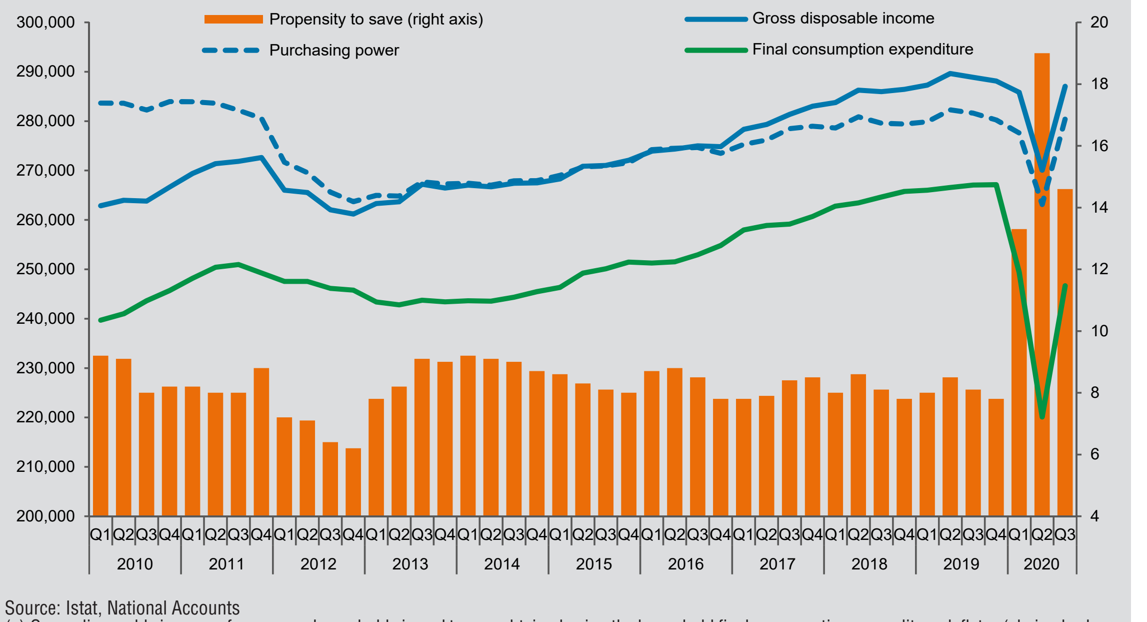
National accounts data can be used to get a timely and accurate picture of the dynamics of household income, expenditure and purchasing power in the pandemic months of 2020.
The first negative signs emerged in Q1 of 2020, due to the start of the lockdown imposed in early March. In Q2 of 2020, household consumption expenditure fell by 11.7%, which was more pronounced than the fall in disposable income (-5.5%), leading to an abnormal increase in the propensity to save, which reached 19% (it had been 13.3% in the first quarter). (Figure 1). The reduction in households' purchasing power (-5.2%) was slightly less than the decrease in income due to negative price dynamics. In the third quarter, thanks to the easing of anti-COVID measures and the increase in the country's level of economic activity and, to a lesser extent, in households' disposable income, consumer spending increased significantly (+12.1%), with a drop in the propensity to save (-4.4 percentage points). The propensity to save remained, in the first nine months of the year as a whole, at much higher levels than the average levels of previous years (it was 8.1% in 2019)[2].
This evidence is also reflected in the dynamics of the retail sales index, which in March and April showed a slump compared to the previous month, driven by a strong decline in non-food trade, while food sales remained stable. From May, the index showed strong signs of recovery, and then a strong increase in August, mainly driven by non-food sales. As a result, the sales index reached slightly higher levels in August than the average of 2019, although the cumulative trend change for January-August was still lower than in the same period last year (-8.3%). Only since November of 2020, there has also been a decrease in

1 This chapter was edited by Barbara Baldazzi, with contributions from Claudia Cicconi, Stefania Cuicchio, Valeria de Martino, Gabriella Donatiello, Francesca Lariccia, Daniela Lo Castro, Federico Polidoro, Carmela Squarcio.

2 See Statistica Flash "Quartely Non-Financial Account of General Government, Income and Savings of Households and Profits of Non-Financial Corporations" https://www.istat.it/it/files//2021/01/QSA_2020Q3_EN.pdf.

retail sales compared to the previous month, while the propensity of e-commerce usage continued to accelerate throughout 2020 compared to the previous year[3].
Considering the first three quarters of 2020 compared to the same period of the previous year, an 8.5%[4] fall in nominal GDP was matched by a 2.6% drop in household disposable income (-2.7% in terms of purchasing power), sustained by the massive public transfers put in place by the government authorities to counteract the negative effects of the health crisis and the restrictions placed on productive activities. Constraints on production activities, consumption patterns and the mobility of individuals, combined with growing uncertainty about prospects, led to a fall in consumer spending (-10.4%).
The resumption of infections in the last part of 2020 and in the first months of 2021, with the new health containment measures, could have a negative impact on future economic prospects, dominated by uncertainty linked to the difficult-to-predict evolution of the pandemic.

Figure 1. Propensity to save (right-hand scale), gross disposable income, purchasing power (a)**, final consumption expenditure of consumer households. Years 2010-2020** (b)**. Seasonally adjusted data in millions of euros and percentage values**



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).
(b) Data for 2020 are available through Q3.

Confidence in the country's economic situation still unstable, a few more prospects for the future

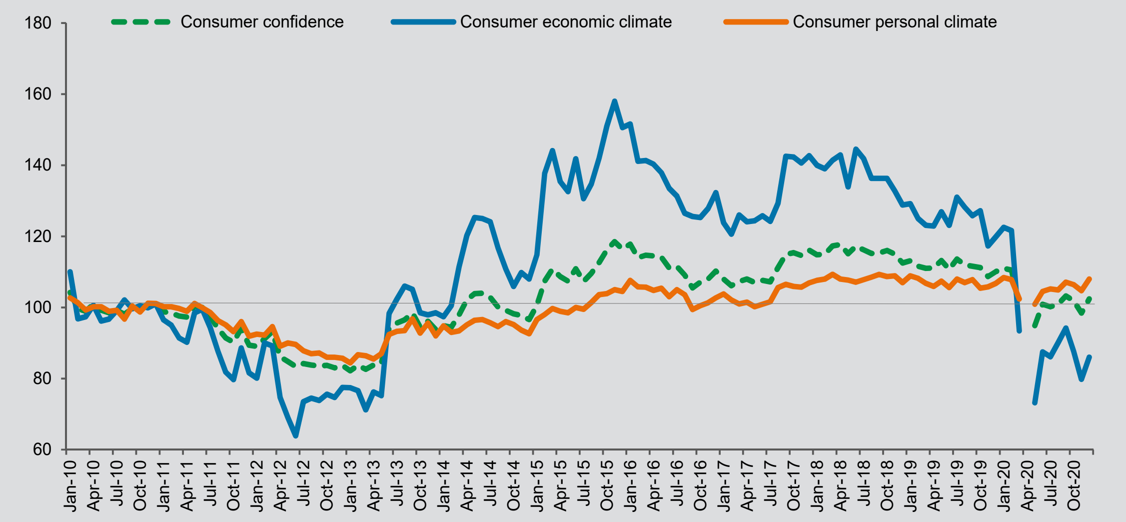
The subjective assessment of one's material conditions and the climate of confidence within a country are complementary indicators to objective assessments based on income, expenditure or material conditions. At this particular time, subjective indicators become of fundamental importance in shaping the sentiment of the population, and from this the possible

3 See "Monthly Report on the Italian Economy" https://www.istat.it/it/files//2020/11/MonRep_october_fin.pdf, https://www.istat.it/it/files//2021/02/MonRep_gen.pdf.

4 On 1 March 2021 Istat published the GDP estimate for the entire year 2020: GDP at market prices was EUR 1,651,595 million at current prices, a fall of 7.8% compared to the previous year. In volume terms, GDP fell by 8.9%.

future dynamics in terms of expenditure, employment and income. Consumer confidence[5] collapsed in March and May, when it reached its lowest level since December 2013, but improved again in the following months, although it is still well below the level before the health crisis. The consumer economic climate (Figure 2), which is based on opinions and expectations of the situation in Italy, has a greater impact, remaining at very low levels throughout 2020 (consumer economic climate was strongly influenced by the course of the epidemic: the greatest contractions are felt in the months in which the contagions and the consequent containment measures start up again). The contraction in the consumer current climate is less pronounced (Figure 3), even though the economic situation experienced by households month after month remains constantly difficult (values of the consumer current climate from March to December 2020 are on average about 10 points away from the values of the respective months of 2019).

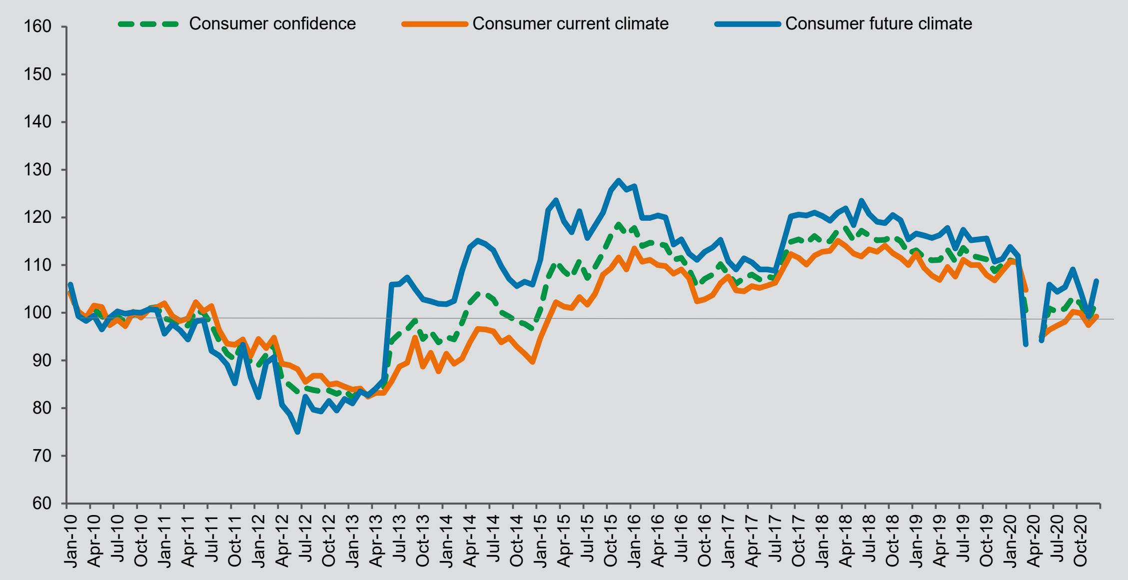
Figure 2. Indices of Consumer Confidence, Consumer Economic Climate (a)**, Consumer Personal Climate** (b)**. Years 2010-2020** (c)**. Monthly seasonally adjusted indices base 2010=100**



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.

5 Consumer Confidence Climate: it is elaborated on the base of nine questions deemed most appropriate to assess the optimism/pessimism of consumers (namely: assessments and expectations on the Italian general economic situation, expectations on unemployment, assessments and expectations on households' financial situation, current opportunity and future possibility of savings, current opportunities of durable goods purchases, assessments on family budget). The results of the nine questions, expressed as weighted balances on raw data, are aggregated through a simple arithmetic average; the result is then reported in the index (based on 2010) and seasonally adjusted with the direct method. A breakdown of the Consumer Confidence Climate is also proposed. The derived values are expressed as indexes (based on 2010) and are seasonally adjusted (where necessary) with the direct method. In particular: a) Economic Climate, simple arithmetic average of weighted balances related to both the assessments and expectations on the Italian general economic situation and the expectations on unemployment; b) Personal Climate, simple arithmetic average of the weighted balances of the remaining six questions of the Confidence Indicator (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); c) Current Climate, simple arithmetic average of the questions related to the assessments; d) Future Climate: simple arithmetic average of the questions related to the expectations. https://www.istat.it/en/archivio/consumer+and+business+confidence.

Figure 3. Indices of Consumer Confidence, Consumer Current Climate (a)**, Consumer Future Climate** (b)**. Years 2010-2020** (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.

In 2020, households face a worsening economic situation

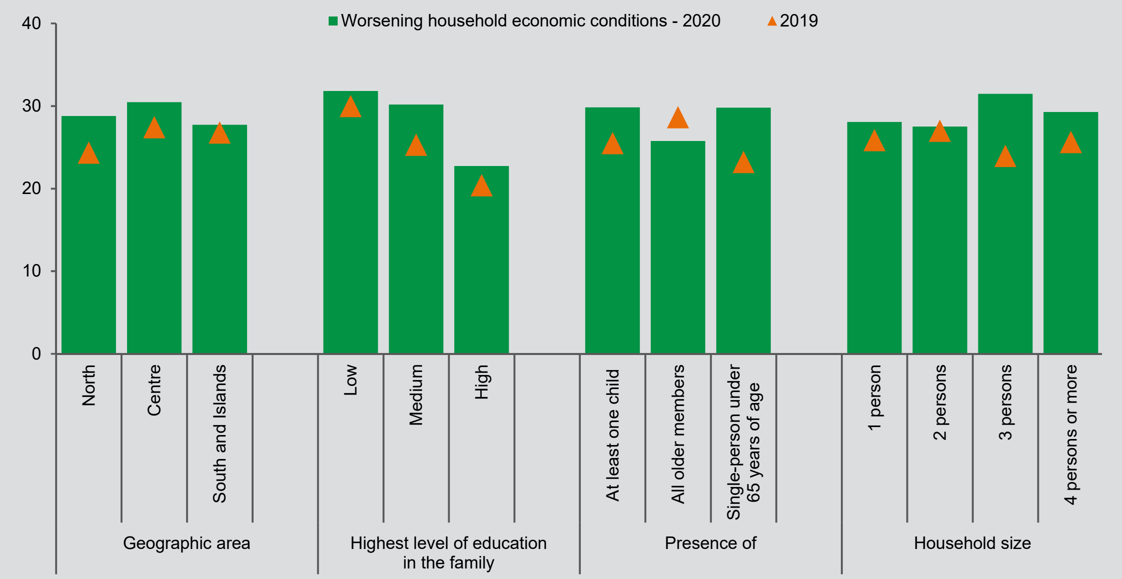
2020 was a very complex year for households, 28.8% of which declared a worsening of the household economic situation compared to the previous year, up from 25.8% in 2019. This worsening affected 30.5% of households in the Centre, 28.8% in the North and 27.7% in the South; households with three or more members, single people under 65 and households with at least one minor child were the most likely to perceive a worsening economic condition. On the other hand, households with a higher level of education were more protected, as were households composed of elderly people, whether living alone or as a couple (Figure 4).

The preliminary estimate of absolute poverty for 2020 identifies more than two million households in absolute poverty (with an incidence on households of 7.7%), for a total of over 5.6 million individuals (with an incidence on individuals of 9.4%), a significant increase compared to 2019. Poverty is growing especially in the North (9.4%), an area strongly affected by the pandemic and its economic and social consequences, significantly exceeding even the 2018 values. The growth of the incidence is more contained in the Centre (6.7%) and in the South (11.1%), where the incidence returns to the 2018 levels (Figure 5).

With the exception of one-person households, which present a stable poverty incidence, a wider spread of absolute poverty affects all households. In particular, single-parent families and couples with one or two children are experiencing a worsening of their condition. Even in the year of the pandemic, presence of elderly people in the family (mostly with at least a pension income that guarantees regular income) reduces the risk of falling into poverty: in fact, the percentage of households in absolute poverty with at least one elderly person is stable compared to the previous year (5.6%). Looking at the composition by citizenship, in

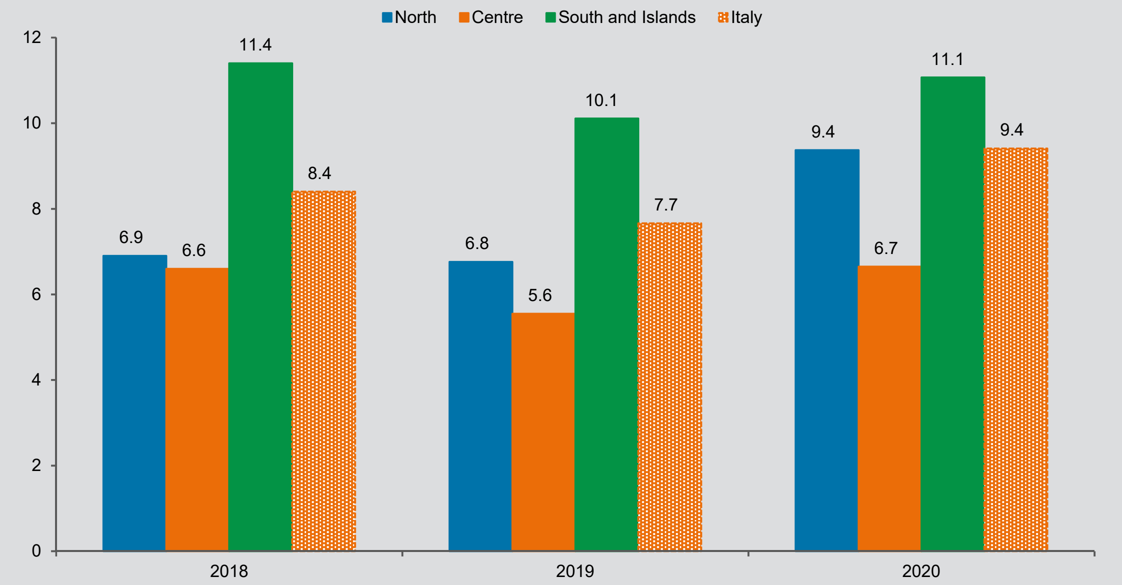
2020 the incidence of absolute poverty increases both for households with only Italians, from 4.9% to 6%, and for those with at least one foreigner, from 22% to 25.7%, even if the share of households with foreigners on the total number of poor households decreases, going from over 30% to 28.7%.

Figure 4. Households reporting that the household economic situation has worsened or worsened a lot compared to the previous year by geographic area, highest educational qualification in the household (a), **presence of at least one child, all elderly members, only persons under 65, household size. Years 2019 and 2020** (b). **Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) Low educational level: Lower secondary, elementary or no degree (Isced 0-2), Medium educational level: Upper secondary (Isced 3-4), High educational level: Bachelor's degree or other tertiary degree (Isced 5-8).
(b) 2020 data are provisional.

Figure 5. Individuals in absolute poverty by geographic area. Years 2018-2020 (a). **Percentage values**

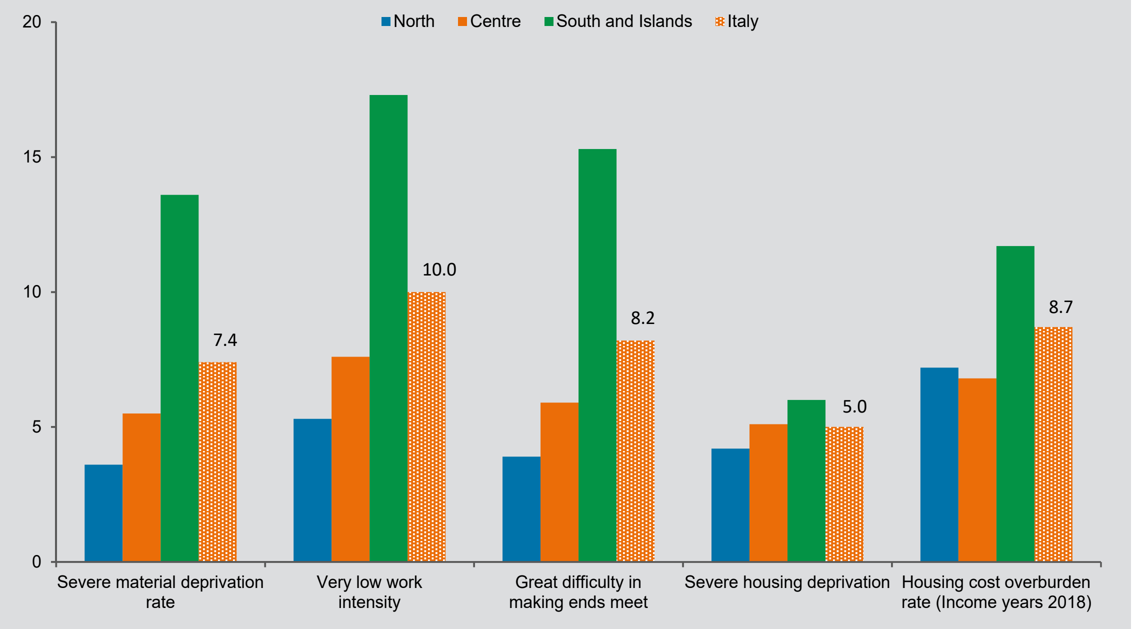


Source: Istat, Household Budget Survey
(a) Preliminary estimates for the year 2020.

In the pre-pandemic year, poverty and income indicators had improved but inequalities in distribution persisted

The worsening of the economic condition in 2020 has impacted on a pre-pandemic situation of households showing deep inequalities by territory and by categories of subjects. The analysis of the characteristics of the collective in 2019 is therefore useful to outline the starting economic situation of households and individuals. In 2019, indicators linked to income capacity and economic resources, which enable households to achieve a certain standard of living, showed substantial signs of improvement.

Figure 6. 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. 2019 Survey year - 2018 Incomes. Percentage values



Source: Istat, Eu-Silc

In 2019, the percentage of those living in households where individuals worked for less than 20 per cent of their potential[6] was 10%, down from 11.3% in 2018. The cost of maintaining a dwelling had a significant impact on household income[7] and for 8.7 per cent of citizens it was particularly high, exceeding 40 per cent of net household income (Figure 6). In addition, 8.2% of people (down from 9.7% in 2018) said they had great difficulty making ends meet.

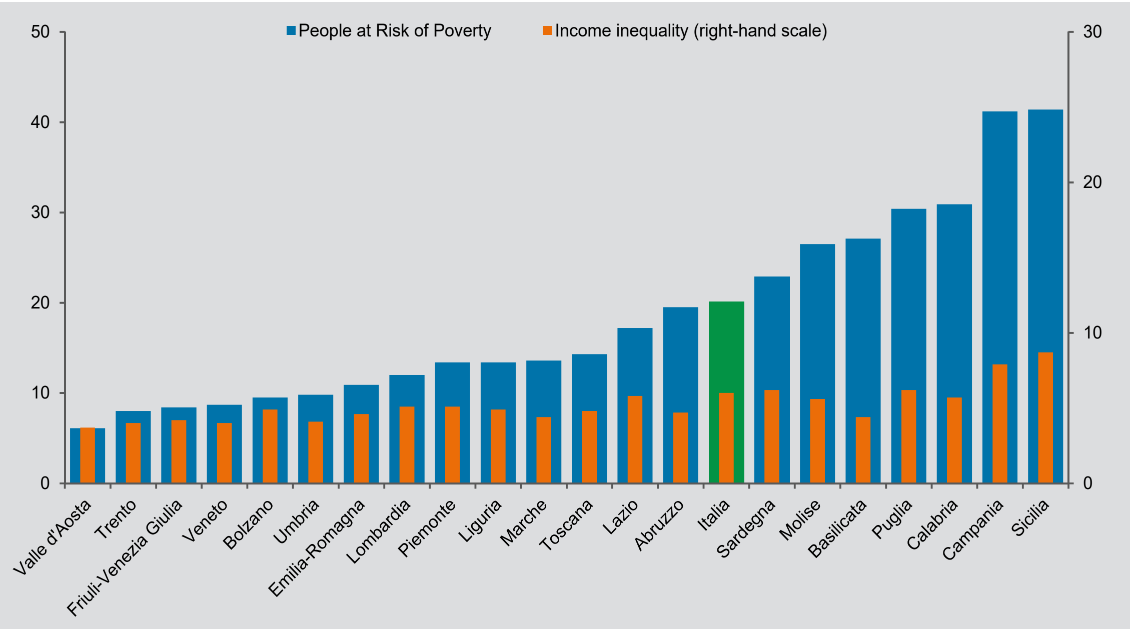
Despite the improvement in deprivation and poverty indicators, the differences in the impact of the phenomena in the territories remain high. The situation in the South and Islands of Italy is particularly critical, where the share of those living in very low work intensity households has fallen (from 19% to 17.3%). The great difficulty in reaching the end of the month is felt most strongly in the South and Islands (15.3% of individuals compared with

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

7 Housing cost overburden rate is calculated on incomes in the year preceding the survey year.

5.9% in the Centre and 3.9% in the North), although this is down on 2018. The housing cost overburden rate is still high compared to the other territories and up compared to the previous year.
The at-risk-of-poverty indicator, calculated on 2018 incomes, measures how 20.1% of people residing in Italy received a net equivalent income lower than or equal to 60% of the median equivalent income[8]; in Sicilia and Campania, the phenomenon concerns 41% of the population (Figure 7).
Income inequality level, measured by the ratio of the income held by the richest 20 per cent of the population to the poorest 20 per cent, remains stable at 6 points for incomes in 2018[9], remaining among the highest in Europe and thus signalling a profoundly unequal distribution of income. In the regions of South and Islands Italy, the highest risk of poverty is associated with high inequality indices; the latter exceed the average value for Italy in Sardegna and Puglia (6.2), Campania (7.9) and Sicilia (8.7).

Figure 7. Income inequality (right-hand scale) and people at risk of poverty by region. 2019 Survey year - 2018 Incomes. Ratio of S80/S20 incomes and percentage values



Source: Istat, Eu-Silc

Conditions of material deprivation

An important aspect of economic well-being relates to material deprivation conditions, such as the availability of certain consumer durables, the state of the house and the possibility of buying certain goods and services. These indicators make it possible to capture aspects that cannot be explained by the level of income or consumption. Moreover, they make it possible to monitor one of the main objectives for a European pillar of social rights[10], which is to

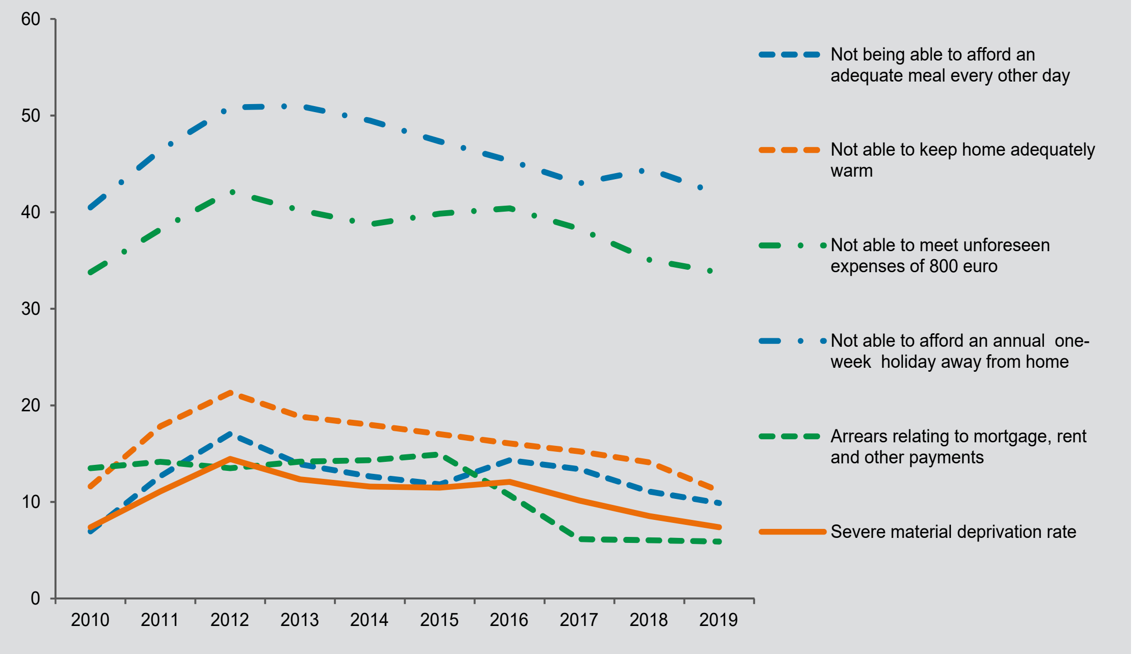
8 Median equivalised income is estimated at €10,299 (€858 per month).
9 The income on which the inequality indicator is calculated refers to the year preceding the survey year.
10 See Communication from the Commision to the European Parliament, the Council, the European Economic and Social Committe and the Commite of the Regions "A Strong Social Europe for Just Transitions" https://eur-lex.europa.eu/resource.html?uri=cellar:e8c76c67-37a0-11ea-ba6e-01aa75ed71a1.0003.02/DOC_1&format=PDF.

fight poverty without leaving anyone behind, by providing the support needed to find work, access quality healthcare, decent education and training opportunities, affordable housing, access to essential goods and services, and combating housing and material deprivation.

In 2019, 7.4% of individuals reported being severely materially deprived, i.e. showing at least four of the nine signs of deprivation.

In particular, the share of individuals in households that say they cannot afford unexpected expenses has returned to 2010 levels (from a peak of 42.1% in 2012 to 33.8% in 2019), while the share of people who say they cannot afford a week's holiday away from home per year has remained above 40% (from 50.8% in 2012 to 41.9%). The indicators of not being able to afford a proper meal every second day, not being able to heat the house adequately, as well as having mortgage/rent arrears, had a lower incidence on the population (Figure 8).

Figure 8. People with severe material deprivation and specific deprivation conditions. Years 2010-2019. Percentage values

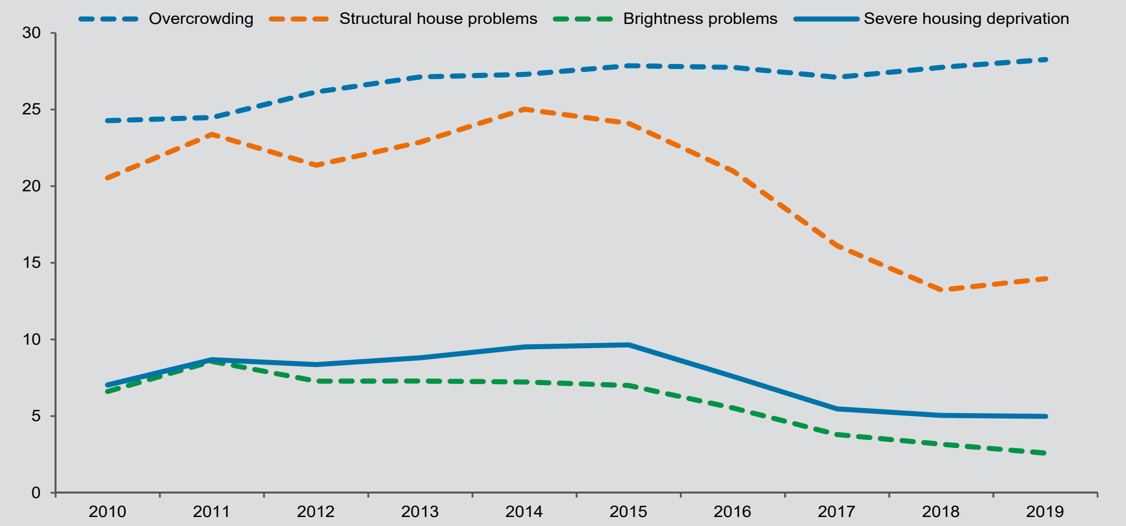


Source: Istat, Eu-Silc

The share of people living in severe housing deprivation, i.e. in situations of housing overcrowding or in dwellings lacking certain services and with structural problems (ceilings, fixtures, etc.), is 5%, stable compared to 2018 (Figure 9). The virtuous downward trend that had affected the component linked to the absence of services and structural housing problems is interrupted; on the other hand, the component linked to the housing overcrowding indicator remains high[11].

11 According to the methodology currently used by Eurostat a person is considered as living in an overcrowded household if the household does not have at its disposal a minimum number of rooms equal to: one room for the household; one room per couple in the household; one room for each single person aged 18 or more; one room per pair of single people of the same gender between 12 and 17 years of age; one room for each single person between 12 and 17 years of age and not included in the previous category; one room per pair of children under 12 years of age.

Figure 9. People with severe housing deprivation and specific deprivation conditions. Years 2010-2019. Percentage values

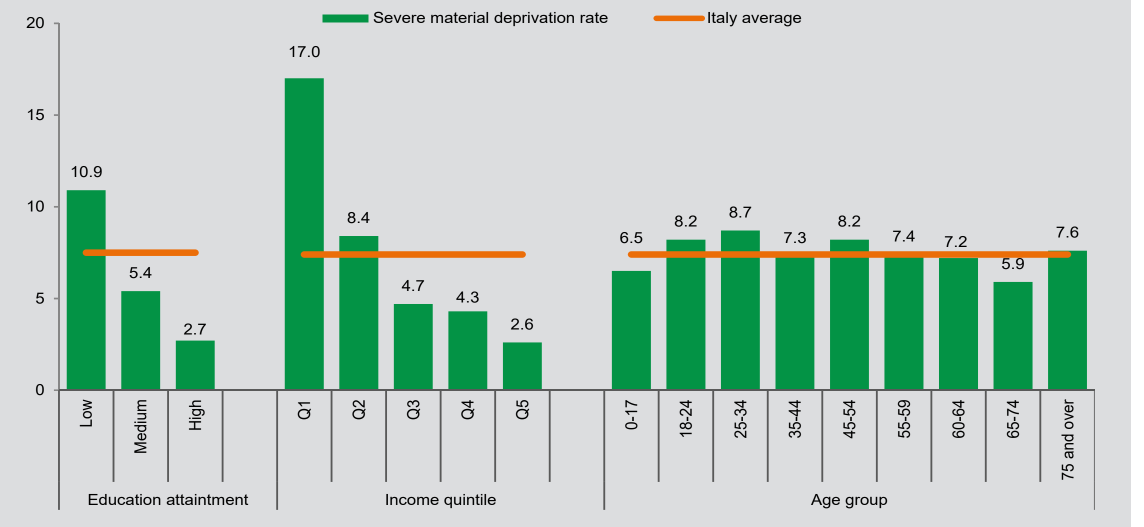


Source: Istat, Eu-Silc
(a) Low educational level: Lower secondary, elementary or no degree (Isced 0-2), Medium educational level: Upper secondary (Isced 3-4), High educational level: Bachelor's degree or other tertiary degree (Isced 5-8).
(b) The classification into income quintiles is obtained by sorting 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.

Inequalities in household material and housing deprivation persist in pre-pandemic year

In 2019, the incidence of severe material deprivation appears highest for households with 3 or more children (8.7%), people under 65 living alone (10.8%) and single parents (12.5%). As expected, the incidence decreases as income rises: 17% of individuals in the top fifth of the income distribution are also severely materially deprived (Figure 10). A higher level of education, on the other hand, provides some protection against deprivation. Among those with a lower-secondary school qualification, 10.9% experience severe material deprivation compared with 2.7% of those with a university or tertiary degree.
Severe material deprivation affects all household members, parents and children, and often those who start out at a disadvantage in life are children and young people living in households where indicators of poverty, social exclusion and material and housing deprivation are highest. Children and young people risk perpetuating the same starting conditions into adulthood, due to a lack of opportunities and prospects. The percentage of children and young people living in conditions of severe material deprivation is strongly associated with the level of education of their parents: it concerns 12.3% of children and young people whose parents have at least a lower secondary school qualification, it drops by half (6.4%) for those whose parents have a upper secondary school qualification and 2.1% for those whose parents have a tertiary education.

Figure 10. People in severe material deprivation by educational level (a), **income distribution** (b) **and age group. Year 2019. Percentage values**



Source: Istat, Eu-Silc
(a) Low educational level: Lower secondary, elementary or no degree (Isced 0-2), Medium educational level: Upper secondary (Isced 3-4), High educational level: Bachelor's degree or other tertiary degree (Isced 5-8).
(b) 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.

Moreover, children and young people suffer more from inadequate housing conditions than the elderly population (8.7% among 18-24 year olds against 2.2% among 65-74 year olds). Also the incidence of severe housing deprivation decreases, as expected, as income increases (Figure 11): individuals who are included in the first fifth of the income distribution live in inadequate housing in 8.5% of the cases and, moreover, in 34.7% of the cases, they spend a large part of their income on housing.

Figure 11. Persons in severe housing deprivation by educational level (a), **income distribution** (b) **and age group. Year 2019. Percentage values values**

Source: Istat, Eu-Silc
(a) Low educational level: Lower secondary, elementary or no degree (Isced 0-2), Medium educational level: Upper secondary (Isced 3-4), High educational level: Bachelor's degree or other tertiary degree (Isced 5-8).
(b) 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.

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:** Share of population 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 800 euros in 2014), iv) eat meat, fish or a protein equivalent every second day, v) a week holiday away from home, or could not afford) vi) a car, vii) a washing machine, viii) a colour TV, 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

Indicators by region and geographic area

REGIONS AND GEOGRAPHIC AREAS	Gross disposable income per capita (a)	Disposable income inequality	People at risk of poverty (b)	Per capita net wealth (a)
	2019	2018 (*)	2019 (**)	2016
Piemonte	21,371	5.1	13.4	....
Valle d'Aosta/Vallée d'Aoste	21,593	3.7	6.1	....
Liguria	21,900	4.9	13.4	....
Lombardia	23,282	5.1	12.0	....
Trentino-Alto Adige/Südtirol	24,423	4.5	8.7	....
Bolzano/Bozen	*26,852*	*4.9*	*9.5*	....
Trento	*22,042*	*4.0*	*8.0*	....
Veneto	20,746	4.0	8.7	....
Friuli-Venezia Giulia	21,240	4.2	8.4	....
Emilia-Romagna	23,041	4.6	10.9	....
Toscana	20,782		14.3	....
Umbria	18,908	4.1	9.8	....
Marche	19,206	4.4	13.6	....
Lazio	19,999	5.8	17.2	....
Abruzzo	16,525	4.7	19.5	....
Molise	14,678	5.6	26.5	....
Campania	13,682	7.9	41.2	....
Puglia	14,484	6.2	30.4	....
Basilicata	14,422	4.4	27.1	....
Calabria	13,160	5.7	30.9	....
Sicilia	13,827	8.7	41.4	....
Sardegna	15,597	6.2	22.9	....
North	22,366	4.8	11.2	104,892
Centre	20,061	5.2	15.3	102,924
South and Islands	14,193	7.2	34.7	55,603
Italy	**19,124**	**6.0**	**20.1**	**87,451**

(a) In Euro;
(b) Per 100 persons;
(c) Data for the Autonomous Province of Trento, Umbria and Basilicata, are statistically not significant, because it correspond to a sample size between 20 and 49 units;
(d) Data for Valle d'Aosta, Autonomous Provinces of Trento and Bolzano, Friuli-Venezia Giulia, Molise, Basilicata and Calabria are statistically not significant, because it correspond to a sample size between 20 and 49 units;
(e) Data for Umbria are statistically not significant, because it correspond to a sample size between 20 and 49 units;
(f) Data for Valle d'Aosta, Autonomous Provinces of Trento and Bolzano, Umbria and Abruzzo are statistically not significant, because it correspond to a sample size between 20 and 49 units;
(*) The indicator refers to the year of achievement of income (2018) and not to the survey year (2019);
(**) The indicator refers to the survey year (2019) while income is referred to the previous year (2018).

Absolute poverty (incidence) (b)	Severe material deprivation rate (b) (c)	Severe housing deprivation (b) (d)	Great difficulty in making ends meet (b) (e)	Very low work intensity (b) (f)	Housing cost overburden rate (b)
2019	2019	2019	2019	2019	2019
....	3.1	3.6	4.2	7.0	8.7
....	..	3.5	..	3.5	5.0
....	3.0	4.8	4.0	8.0	9.6
....	4.7	4.9	4.7	5.3	8.1
....	3.0	4.0	3.7	4.4	6.1
....	..	*4.4*	..	*3.2*	*8.4*
....	*5.0*	*3.6*	*7.1*	*5.5*	*3.8*
....	1.7	3.1	2.3	3.6	3.7
....	4.1	1.8	2.9	5.7	5.3
....	4.0	4.8	3.7	4.9	7.6
....	3.4	3.9	4.3	6.9	5.3
....	1.8	6.9	2.4	4.0	4.2
....	4.0	5.6	3.4	6.2	4.3
....	7.8	5.5	8.1	8.8	8.9
....	6.2	11.9	12.8	6.9	4.9
....	12.0	7.9	13.3	13.2	9.5
....	16.6	6.9	25.9	18.6	14.6
....	11.9	6.1	10.3	13.2	8.3
....	8.8	4.9	9.2	11.5	5.8
....	8.6	3.8	8.3	12.3	6.7
....	17.8	5.1	12.4	25.0	16.7
....	8.0	3.4	11.2	15.6	9.1
6.8	3.6	4.2	3.9	5.3	7.2
5.6	5.5	5.1	5.9	7.6	6.8
10.1	13.6	6.0	15.3	17.3	11.7
7.7	**7.4**	**5.0**	**8.2**	**10.0**	**8.7**

5. 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. In Italy, they also make a significant contribution to collective well-being, because family, friendship and associative solidarity networks are a traditional strong point that counterbalance for the shortcomings of public services.
Within these networks, human and material resources are mobilised to ensure support and protection both in everyday life and in critical moments.
In Italy, the levels of satisfaction with relations with family and friends are traditionally very high, as is the possibility of counting on a network of help made up of non-cohabiting friends and relatives. The same cannot be said for the wider society, towards which emerges, instead, a strong distrust from the population, which does not feel safe and protected enough outside family and friends networks.
In the regions of southern Italy, all forms of social networks appear weaker than in the rest of the Country, and associations and volunteer work are less widespread, despite the fact that the needs are more serious. The disadvantage of the South and Islands also remains for social, civic and political commitment, testifying not only to different traditions, a legacy of ancient historical-cultural differences, but also to more unfavourable socio-economic conditions, which hinder the growth of social and political participation.
In 2020, in Italy, family and friends networks confirmed their positive role, helping to alleviate the difficulties of a very delicate phase such as the lockdown, characterized by sacrifices and concerns. In fact, the population's levels of satisfaction with family and friends relationships have remained high.
The particular situation created by the COVID-19 pandemic has fostered greater interest in political and social issues: there has been a significant increase in the proportion of the population that have carried out civic and political participation activities and the proportion of the population that claims to have contributed to the financing of associations has risen.
The analysis of the indicators of the Social Relations domain is organised into three main areas: individuals' satisfaction with family and friends relations; trust in others, social activism in volunteering and financing of associations; civic, political and social participation.

Satisfaction with family and friends relations is stable

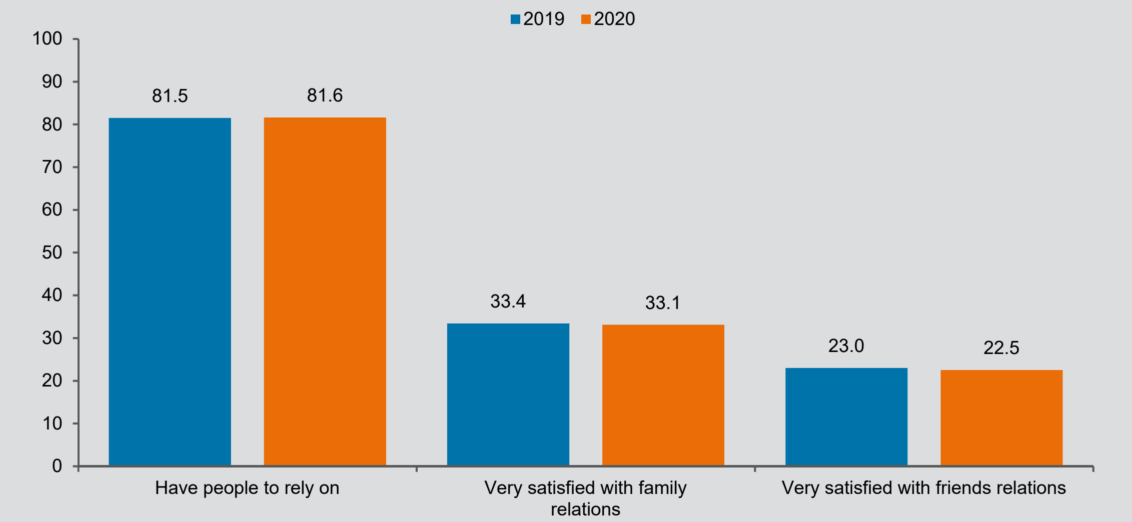
In Italy, families represent a fundamental support network both in carrying out normal daily activities and in critical moments. Even in the face of unexpected and sudden difficulties such as the lockdown, families have represented a source of serenity, making sustainable such a delicate phase, characterised by disorientation, worries and sacrifices[2].
In 2020, one-third of people aged 14 and over say they are very satisfied with their family relationships; if those who say they are fairly satisfied are also included, the overall share

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

2 Istat, Reazione dei cittadini al lockdown. 5 aprile-21 aprile 2020. Fase 1: un Paese compatto contro il COVID-19, https://www.istat.it/it/archivio/243357 (in Italian)

of the satisfied population reaches 89.8%; both levels of satisfaction remain stable over the past year (Figure 1).

Figure 1. People aged 14 and over that have people to rely on and people aged 14 and over that are very satisfied with relations with family and friends. Years 2019 and 2020 (a)**. Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Satisfaction with family relations is expressed in a similar way by men and women; it is highest between the ages of 14 and 34 (where the proportion of the very satisfied reaches 37%), declines in subsequent age groups, and then rises again among those aged 65 and over (just over 30%). The lowest levels of satisfaction are among single individuals (28.6%) and, in particular, among men (24.5%).

The share of those very satisfied with relationships with friends is 22.5%, a figure lower than that reached by family relationships. If we also consider those who declare themselves fairly satisfied, the overall level of satisfaction reaches 81.8%. In this case, too, both levels of satisfaction have remained stable over the last year (Figure 1).

Satisfaction with relations with friends also does not show significant gender differences and the percentage of very satisfied is higher among young people (more than 36% in the 14-24 year-old population), who usually have a wider network of friendships.

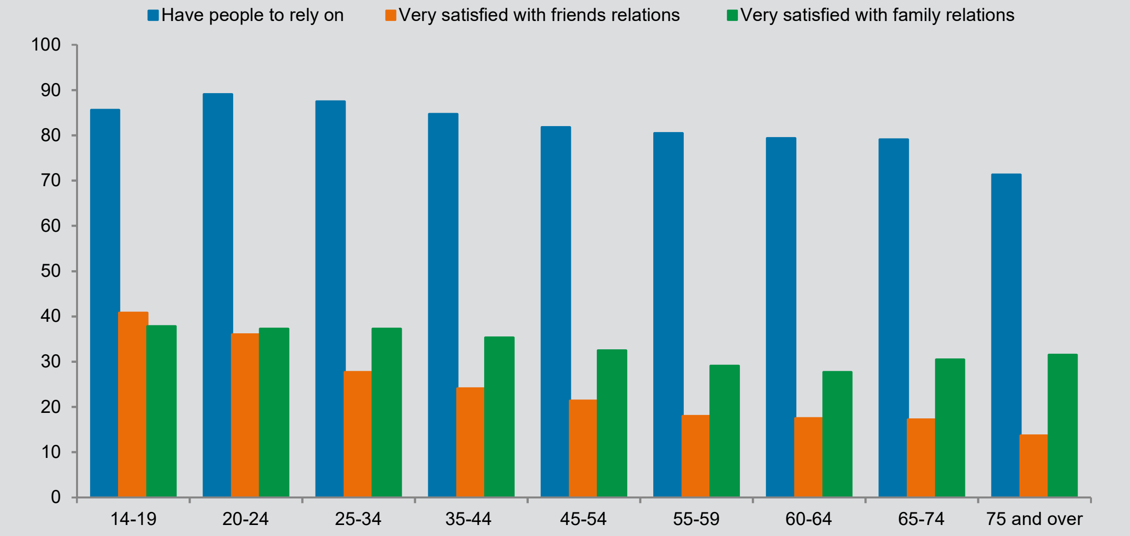
Satisfaction with the network of friends decreases as age increases, reaching its lowest value in the oldest population (13.7% among the population aged 75 and over).

In Italy, the network of relations with non-cohabiting relatives and friends continues to play a fundamental role in the supply of aid on which individuals and families can count.

In 2020, the share of the population reporting that they have relatives, friends, or neighbours they can rely on continues to be very high and stable compared to 2019 (81.6%) (Figure 1).

The availability of an extended network of support people can rely on decreases as age increases: it is highest among the 14-44 year old population (over 84%), then decreases and hits its lowest value among people aged 75 and over (71%). The differences between age groups, however, are less marked than those found for the satisfaction with friends' relations (Figure 2).

Figure 2. People aged 14 and over that have people to rely on and people aged 14 and over that are very satisfied with relations with family and friends by age group. Year 2020 (a)**. Per 100 persons aged 14 and over**

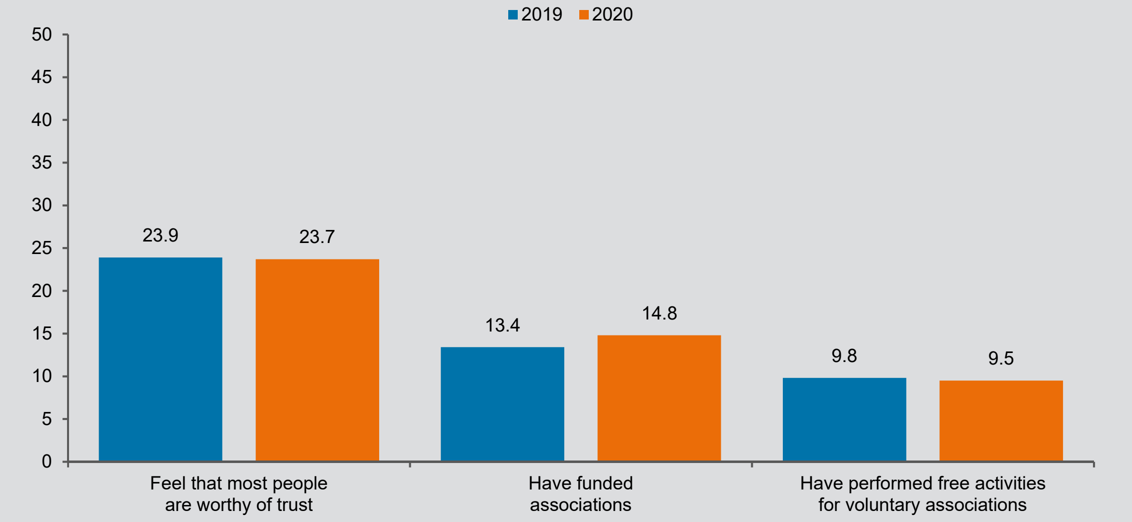


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Trust in others and voluntary activity are stable, association funding is increasing

One of the main indicators of social cohesion and civic sense of a community is “generalized trust”, i.e. the degree of trust that people are willing to place in their fellow citizens. Trust in others is of fundamental importance in the economic, political and social life of a country: in fact, where mutual trust is high, society functions better, is more productive, more cooperative, more cohesive, opportunistic behavior is less widespread and the level of corruption is lower.
If in Italy the levels of satisfaction with family and friends relations are very high, the opposite is true for the wider society, towards which emerges a strong distrust from the population, that does not feel safe and protected enough outside the networks of family and friends. Trust in others continues, in fact, to be very low, even if in recent years it appears to be growing slightly.
In 2020, 23.7% of people aged 14 and over feel that most people are worthy of trust (Figure 3). This figure, one of the highest values of the last decade, confirms the growth recorded in the last 2 years (it was 21% in 2018), due in particular to the increase detected in the Centre and the South and Islands.
The percentage of those who express trust in others is higher among men (24.7% vs. 22.7%), increases with age up to 64 years (27%), and then decreases to 18.6% among people aged 75 and over. Gender differences, non-existent in the middle age groups, emerge among young people under 24 and people aged 65 and over: in both cases, women exhibit lower trust in others than males.

Figure 3. 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 and 2020 (a)**. Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

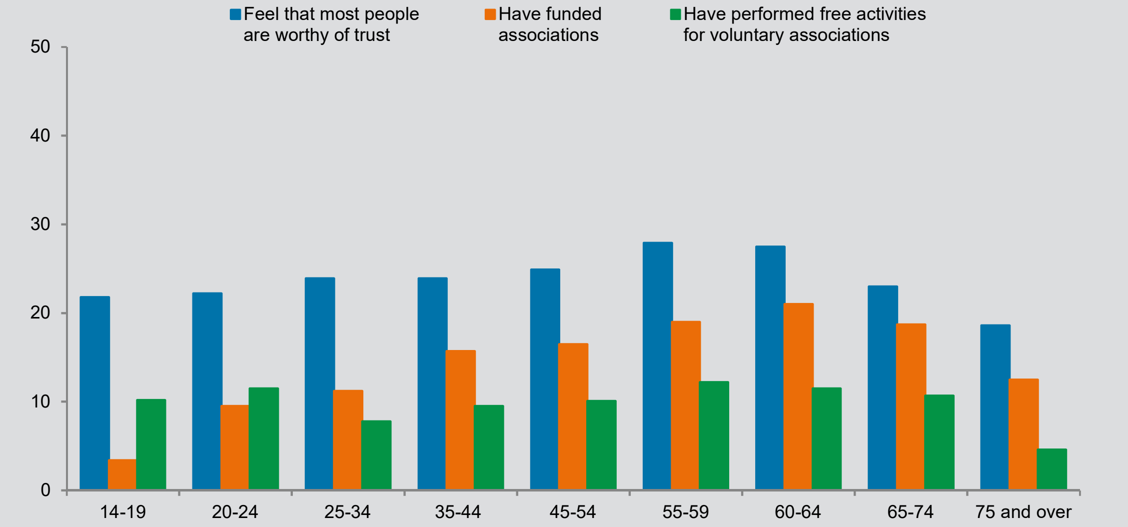
In 2020, after years of stability, the share of people that have funded associations shows a slight increase (14.8% vs. 13.4% in 2019); this is probably also the result of the numerous information and awareness campaigns spread during the lockdown, especially in support of research and medical or health organizations (Figure 3). Despite this increase, the value still has not returned to the 2010 levels, when it had reached 17.6%.The percentage of the population that, in 2020, have performed free activities for voluntary associations is stable (9.5%). For both these indicators, no significant gender differences emerge, while differences by age and level of education are observed.

The making of monetary contributions to associations, which is not very common among young people due to their limited economic capacity, reaches its maximum among people aged 60-64 (21%) and among university graduates (28.7% compared with 8.2% of those with at most a lower secondary school diploma).

For participation in voluntary activity, age-related differences are modest: young people aged 14-24 and adult aged 45-74 show the highest levels of involvement (more than 1 in 10 individuals).

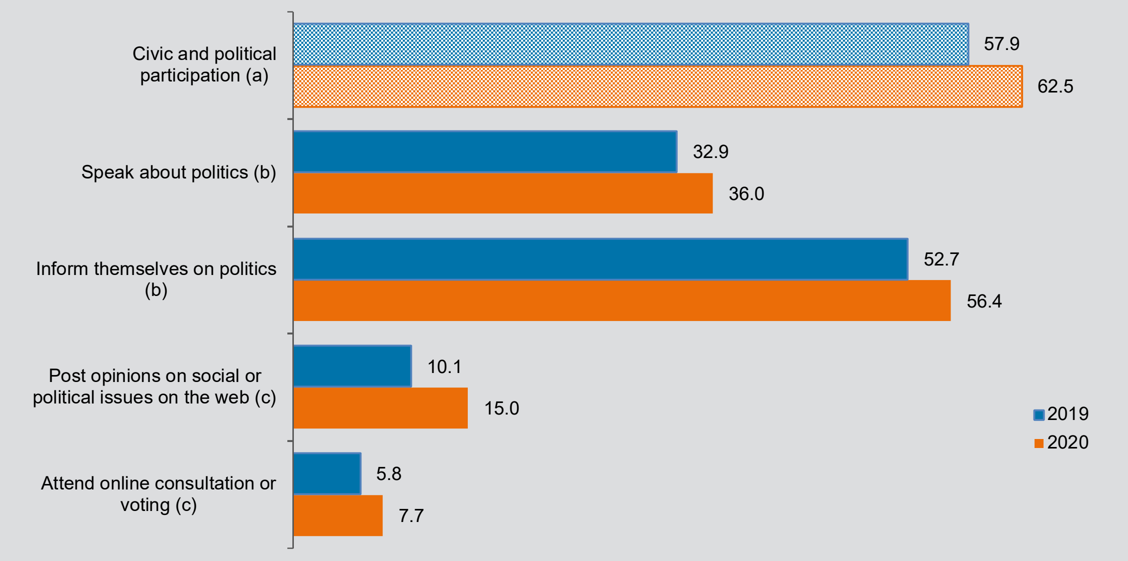
Differences are amplified when considering the level of education: 15.5% of university graduates are involved in voluntary activity, more than twice as many as those with at most a lower secondary school diploma (6.2%).

Figure 4. 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 2020 (a). Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Figure 5. People aged 14 and over who perform activities of civic and political participation. Years 2019 and 2020 (*). Per 100 persons aged 14 and over

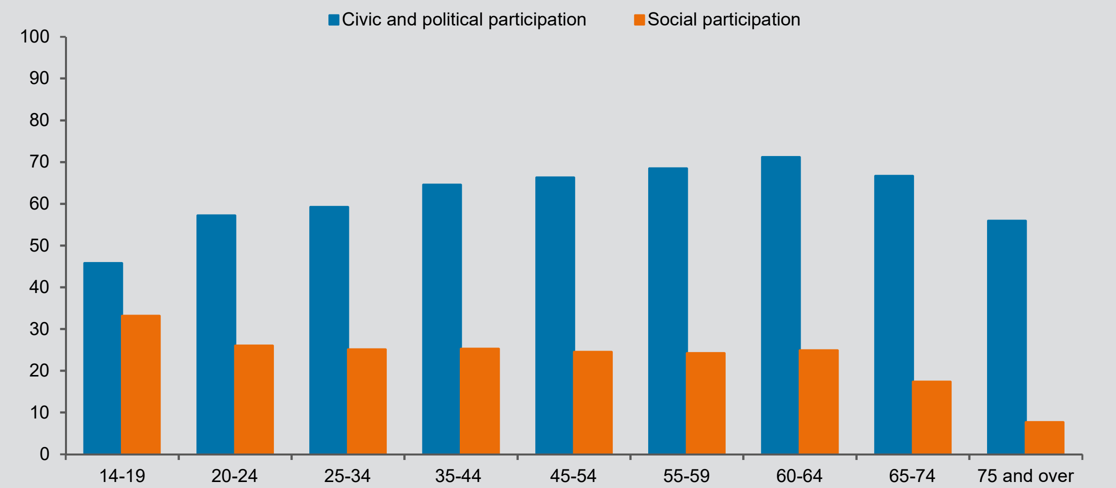


Source: Istat, Survey on Aspects of daily life
(*) 2020 data are provisional.
(a) They performed at least one of the following activities: speak about politics; be informed on the facts of Italian politics; attend online consultation or voting; read and to post opinions.
(b) At least once a week.
(c) On social or political issues on the web, in the 3 months before the interview.

Increasing civic and political participation, social participation is stable

In 2020, 62.5% of the population aged 14 and over performs activities of civic and political participation ("talking about politics", "getting informed", "participating online").
This figure increased sharply comparing to 2019, when it stood at 57.9% (Figure 5). This increase can be attributed to the need to track the evolving arrangements put in place to counter the spread of the COVID-19 pandemic at the national and local levels. It is therefore interrupted the negative trend, which began in 2014, that in 5 years brought to a decrease of 10 percentage points in the percentage of population involved, denoting a growing disinterest of the population especially towards talking and getting informed about politics.
Interest in civic and political issues has increased above all in the central-northern regions (around 6 percentage points more, compared with 2 in the southern regions), among females (+6 percentage points compared with 3.1 for males) and among young people.
In particular, between 2019 and 2020, there is an increase in the share of population posting opinions on social or political issues on the web (+4.9 points) and in the share of the population getting informed on politics (+3.7) and speaking about politics (+3.1).
Civic and political participation peaks in the 60-64 age group (71.2%), then decreases to 55.9% among the 75+ age group, even though the elderly remain well above the level found among the 14-19 age group (45.8%) (Figure 6). The share of the population involved in forms of social participation is lower, in fact, less than a quarter of the population aged 14 and over (22.3%) claims to have participated in the activities of associations of a recreational, cultural, civic and sporting nature. Unlike civic and political participation, social participation has remained unchanged over the past year.
Social participation is highest among young people, remains stable and just above the average value up to the age of 64 (1 person out of 4), and then falls to its lowest value among the population aged 75 and over (7.7%).
Strong gender differences emerge for social, civic and political participation, with higher percentages among men. The gap is greater for civic and political participation (11.6 percentage points more for men in 2020) while it is smaller for social participation (6.3 points).

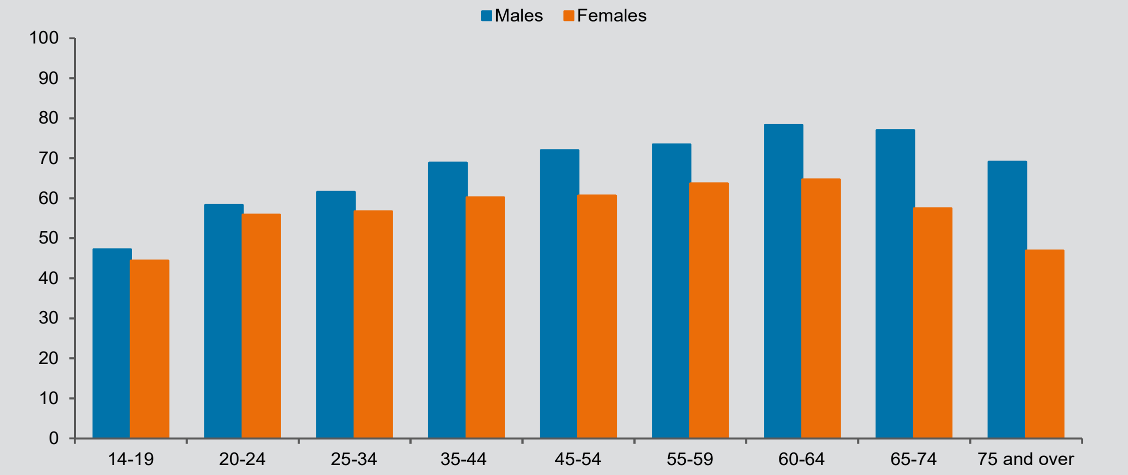
Figure 6. People aged 14 and over who perform activities of social, civic and political participation by age group. Year 2020 (a). **Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The gender gap is minimal among young people and greater among the elderly. Specifically, for civic and political participation, the gap is zero among young people aged 14-24, remains approximately around 10 percentage points in favour of men in the 35-64 age group, and exceeds 20 percentage points among the population aged 65 and over (Figure 7).

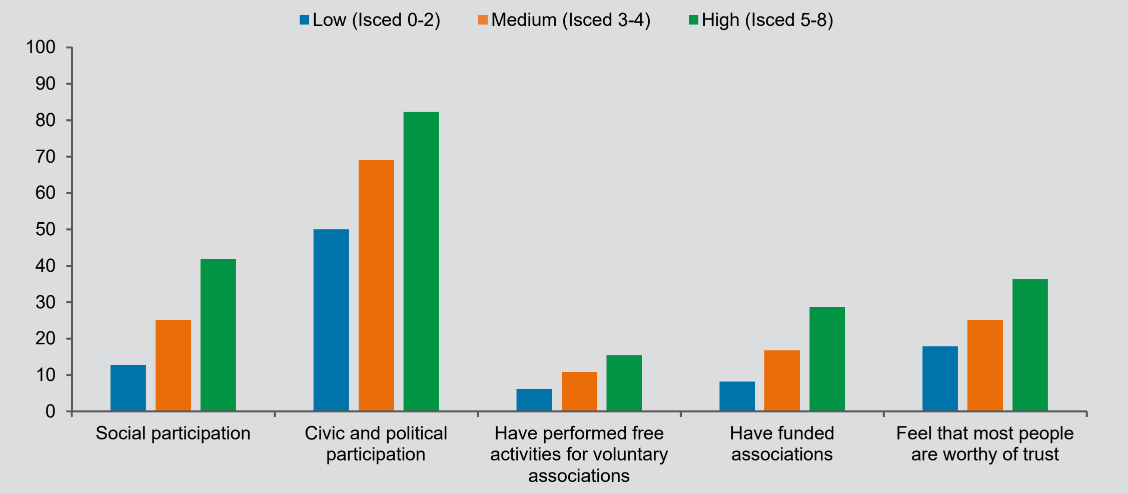
Figure 7. People aged 14 and over who perform activities of civic and political participation by gender and age group. Year 2020 (a). **Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Wider gaps emerge by educational level. 41.9% of university graduates are involved in social participation activities, compared with 25.1% of upper secondary school graduates and 12.7% of those with no more than a lower secondary school diploma.
As far as civic and political participation, the gap is even wider: 82.2% of university graduates engage in civic and political participation activities, compared with 69% of upper secondary school graduates and 50% of those with no more than a lower secondary school diploma (Figure 8).

Figure 8. Social Relationship domain indicators by level of education. Year 2020 (a). **Per 100 persons aged 14 and over with the same level of education**

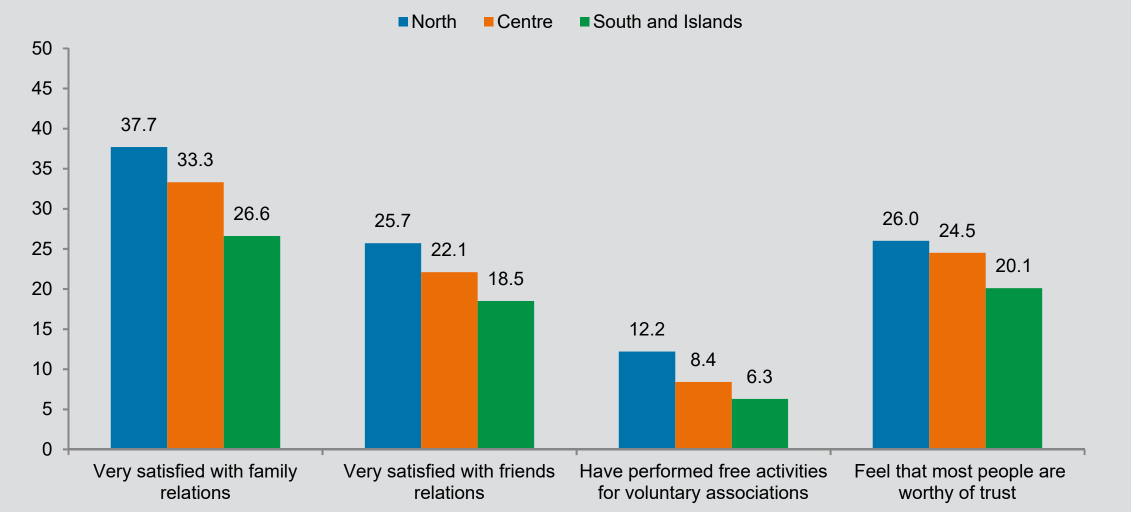


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The disadvantage of the South and Islands is confirmed

In southern Italy, all forms of social networks appear less strong than in the rest of Italy. In fact, family and friends relations, which could in part compensate for the greater difficulties experienced by the population of southern Italy, show in these areas the greatest weaknesses. This finding is not new and has also been noted in previous years.
Satisfaction with relations with friends, which in southern Italy stands at 18.5%, exceeds 25% in the North. The gap widens when family relations are considered: the percentage of the very satisfied in the South is 26.6%, 11 percentage points less than in the North. Only the possibility of counting on relatives and friends in case of need is equally widespread throughout the territory.
The trust in others also records the lowest levels in the South and Islands, where 20.1% of the population aged 14 and over believes that most people are trustworthy, while in the North the level, although still low, rises to 26% (Figure 9).

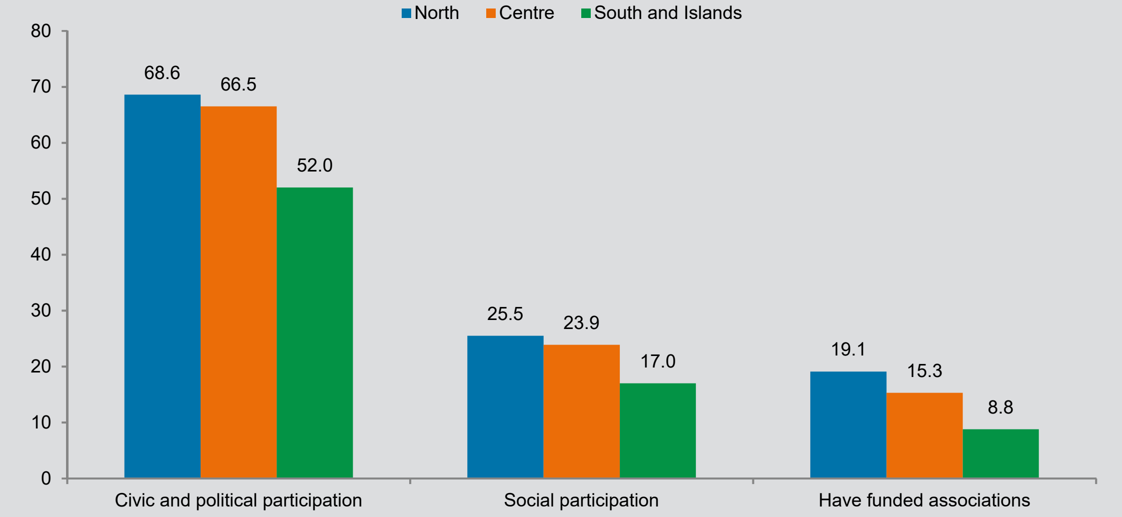
Figure 9. People aged 14 and over that are very satisfied with relations with family and friends, that feel that most people are worthy of trust, that have performed free activities for voluntary associations in the last 12 months by geographic area. Year 2020 (a)**. Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The disadvantage of the South and Islands also persists with regard to associations and volunteer work: in the North, the percentage of the population that claims to have contributed to the financing of associations is more than double that of the South and Islands (19.1% compared with 8.8%). Voluntary activity is also more widespread in the North, where the percentage is almost double than in the South and Islands (12.2% compared with 6.3%).
Territorial differences are also confirmed in terms of social participation: while in the Centre-North a quarter of the population aged 14 and over has declared that they carry out activities of social participation, in the South and Islands the percentage drops to 17% (8.5 percentage points less).

Figure 10. People aged 14 and over that have performed activities of social, civic and political participation or have funded associations or by geographic area. Year 2020 (a). Per 100 persons aged 14 and over



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

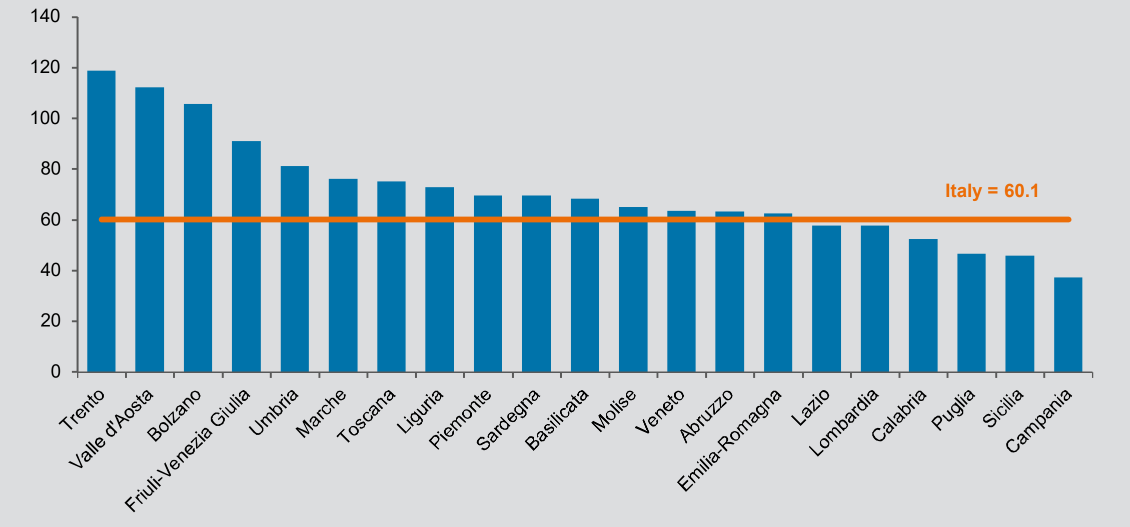
For civic and political participation, the territorial gap is close to 17 percentage points: 68.6% in the North compared with 52% in the South (Figure 10). In addition, in the last year, the gap between North and South has widened further, because political participation has increased more in the Centre-North, where levels were higher.

Nonprofit institutions on the rise, more widespread in the Centre-North

In 2018, there were 359,574 active nonprofit institutions in Italy (equal to 60.1 per 10 thousand inhabitants), which employed 853,476 people (Figure 11).
Their number is growing at constant average annual rates over time (around 2%), while employees, whose increase had been 3.9% between 2016 and 2017, in the two-year period 2017-2018 record a growth by 1%.
Although institutions are growing at a faster rate in the South and Islands, their territorial distribution remains quite concentrated, with more than 50% of active institutions in northern regions, compared to 27.1% in the South and Islands. In the South, however, the nonprofit sector is expanding: between 2017 and 2018, the number of institutions increased from 45.2 to 48 per 10 thousand inhabitants.
Between 2017 and 2018, employees at nonprofit institutions grew most in the North-East (+2.6%) and in the South (+1.4%), while they declined in the Islands (-1.2%). The concentration of employees is even greater than that of institutions: more than 57% of them work in institutions based in the North.
In 2018, the distribution of nonprofit institutions by economic activity remains unchanged from the previous year. The culture, sports and recreation sector gathers almost two-thirds of the units (64.4%), while the others are represented by much lower shares: social assistance and civil protection (9.3%), labour relations and interest representation (6.5%), religion (4.7%), education and research (3.9%) and health (3.5%). The distribution of employees is also concentrated in a few sectors, however distributed with a different order,

indicating a plethora of organizations operating without paid employees, as in the case of the culture, sports and recreation sector, compared with the more structured realities of the social welfare sector: social assistance (37.3% of employees), health (21.8%), education and research (15%) and economic development and social cohesion (12%).

Figure 11. Number of nonprofit institutions per 10,000 inhabitants by region. Year 2018



Source: Istat, Statistical register and Census of nonprofit institutions

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 relatives, friends or neighbors (besides parents, sons, siblings, grandparents, nephews) 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 the web 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 nonprofit 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 AND GEOGRAPHIC AREAS	Satisfaction with family relations (a) 2020 (*)	Satisfaction with friends relations (a) 2020 (*)	People to rely on (a) 2020 (*)	Social participation (a) 2020 (*)
Piemonte	34.6	22.9	80.0	23.0
Valle d'Aosta/Vallée d'Aoste	36.1	25.4	85.2	23.6
Liguria	39.2	24.3	84.4	23.7
Lombardia	37.6	25.6	80.3	24.3
Trentino-Alto Adige/Südtirol	43.6	32.6	87.9	34.2
Bolzano/Bozen	*44.5*	*34.3*	*87.7*	*35.4*
Trento	*42.8*	*30.9*	*88.1*	*33.0*
Veneto	38.9	26.3	82.3	27.3
Friuli-Venezia Giulia	39.5	27.1	81.3	27.2
Emilia-Romagna	37.2	26.3	83.2	26.5
Toscana	37.5	24.4	83.1	24.2
Umbria	35.3	22.2	83.8	24.1
Marche	28.9	19.8	78.5	19.7
Lazio	31.5	21.2	83.2	24.8
Abruzzo	31.0	21.3	83.1	21.9
Molise	26.8	17.0	85.7	20.6
Campania	24.6	18.6	80.9	15.3
Puglia	24.8	18.0	77.5	20.0
Basilicata	28.5	19.9	86.9	19.7
Calabria	28.7	17.8	81.0	13.1
Sicilia	27.8	17.6	79.8	14.7
Sardegna	28.1	20.4	85.5	20.8
North	37.7	25.7	81.7	25.5
Centre	33.3	22.1	82.6	23.9
South and Islands	26.6	18.5	80.8	17.0
Italy	**33.1**	**22.5**	**81.6**	**22.3**

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

Civic and political participation (a)	Voluntary activity (a)	Association funding (a)	Nonprofit organizations (b)	Generalized trust (a)
2020 (*)	2020 (*)	2020 (*)	2018	2020 (*)
69.5	11.2	16.8	69.5	24.3
59.9	10.4	16.2	112.2	28.8
69.1	10.8	15.6	72.8	25.3
66.5	11.7	19.5	57.6	25.3
67.7	19.0	28.8	112.3	37.9
68.5	*15.4*	*28.7*	*105.7*	*40.6*
66.9	*22.4*	*28.9*	*118.7*	*35.4*
70.5	13.3	18.9	63.5	26.3
70.5	11.2	20.0	90.9	28.5
69.9	12.3	19.2	62.4	25.4
67.2	9.5	19.7	75.1	25.9
69.1	10.2	14.9	81.2	18.4
61.0	9.4	15.0	76.0	21.6
67.2	7.2	12.6	57.7	25.2
63.3	8.1	11.5	63.2	25.2
61.0	8.2	13.2	64.9	19.9
48.9	5.8	7.7	37.1	20.6
54.7	6.2	10.0	46.5	22.3
53.6	9.6	13.9	68.2	21.4
43.8	5.7	6.8	52.4	23.4
50.1	5.8	6.4	45.7	13.9
59.8	7.9	14.4	69.5	23.4
68.6	12.2	19.1	66.0	26.0
66.5	8.4	15.3	67.2	24.5
52.0	6.3	8.8	48.0	20.1
62.5	**9.5**	**14.8**	**60.1**	**23.7**

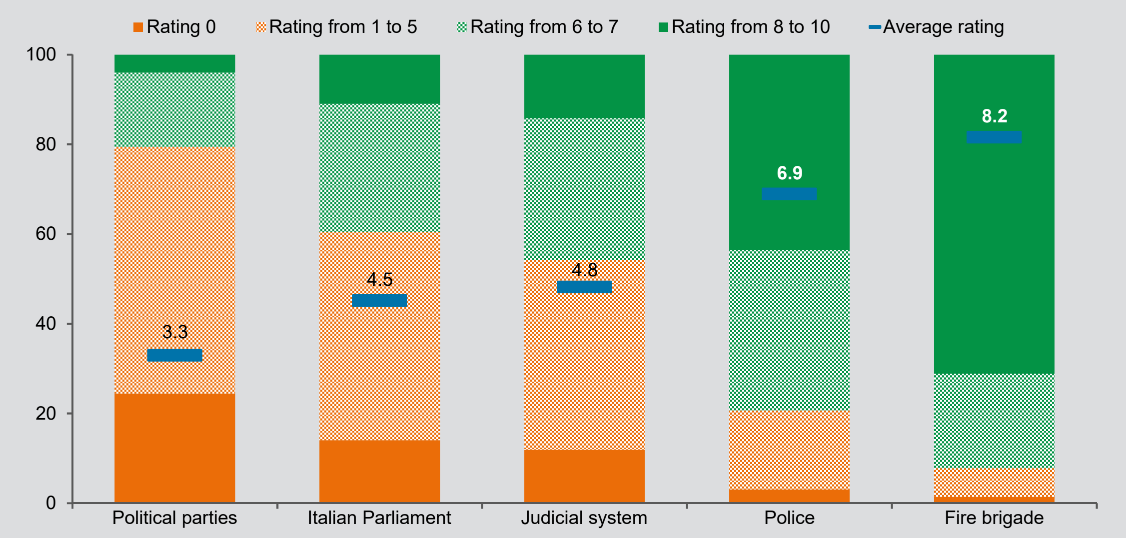
6. Politics and institutions[1]

Citizens' trust in institutions, their good functioning and gender equity, foster cooperation and social cohesion and allow for greater efficiency and effectiveness of public policies. The European Commission's 2020-2025 strategy focuses on the greater inclusion of women in all areas, to be implemented with measures aimed at achieving gender equality and combating discrimination even in its most specific manifestations. The presence of women in top positions of political and institutional representation is constantly increasing, although at different speeds depending on the institution. Trust towards institutions, while remaining at very low levels, also shows some signs of improvement since 2018, and in 2020, the year of the start of the pandemic, the positive trend in trust towards parties and the judicial system consolidates. In order to adapt to the measures to contain the pandemic, the judicial and prison systems have had to adopt important organisational changes, which, overcoming the inevitable initial difficulties, have resulted in good practices, which deserve to be maintained and consolidated once the health emergency has passed.

Trust in institutions keeps growing

In 2020, trust in institutions consolidated the improvements that had begun in 2018: 45.8% of citizens (aged 14 and over) gave a score of at least 6 over 10 to the Judicial system (it was 35.6% in 2017); 39.6% to the National Parliament (it was 22.2% in 2017) and 20.5% to Political Parties (10.9% in 2017). However, the average mark remains below sufficiency: 4.8 to the Judicial system (it was 4.2 in 2017), 4.5 to the National Parliament (it was 3.4) and 3.3 to Political Parties (it was 2.4).

Figure 1. People aged 14 and over by vote of trust in different institutions. Year 2020 (a)**. Percentage values and average rating**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

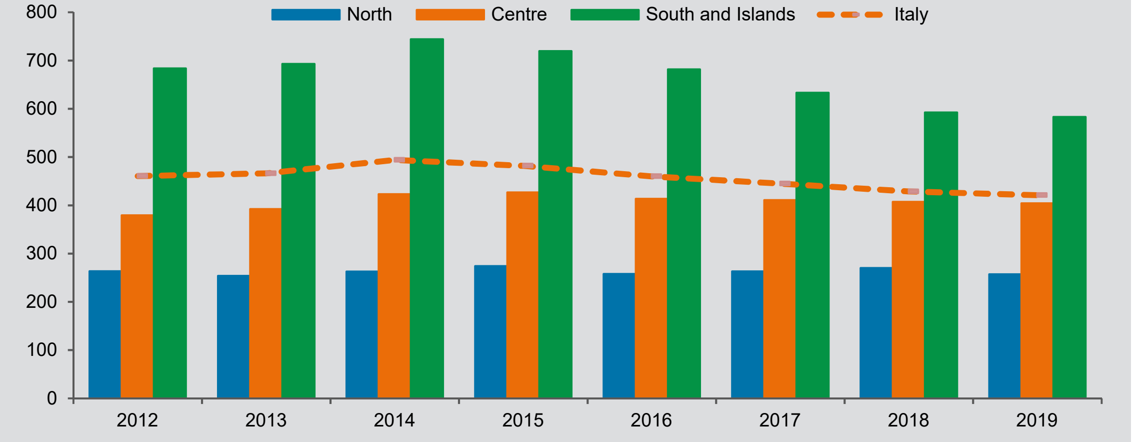
1 This chapter was edited by Barbara Baldazzi, with contributions from Lorena Di Donatantonio and Franco Turetta.

The highest levels of trust continue to be shown in the police force, with 79.4% of scores equal or above 6 and an average score of 6.9, and in the fire brigade, with 92.2% of judgments being sufficient and an average score of 8.2 (Figure 1).

The judicial system towards telematic transformation

The pandemic has also challenged the efficiency of the justice system, due to the need to adapt judicial proceedings to the rules put in place to fight the spread of the COVID-19, which have made it necessary to experiment methods other than the usual in-person ones. After the initial bewilderment and substantial stoppage of activities, the justice system is putting in place methods, rules, implementation directives and tools to be able to carry out distance proceedings, introducing, where possible, remote activities of lawyers and clerks for civil and criminal hearings. As in all other institutional, labour and social fields, the pandemic has imposed an acceleration in technological and organisational choices. In the judicial sphere, this has translated into an increasing use of telematic processes.
In the third quarter of 2020, the Ministry of Justice estimates a growth by 1.3% in civil proceedings pending in the SICID[2] Area, with the inevitable increase in the volume of the 'pathological' civil backlog (proceedings lasting more than three years in civil courts), which had been steadily decreasing over the last ten years. The actual average duration of civil proceedings could therefore be affected by the higher number of pending backlogs, especially if these backlogs are concentrated in areas of the country where their accumulation is already higher and the average duration of proceedings is longer. In 2019, in fact, the actual average duration of civil proceedings was 421 days in the national territory, 583 days in the South and Islands, 404 days in the Centre and 257 days in the North (Figure 2). The regions where proceedings, on average, last less are Valle d'Aosta (136 days), the Autonomous Province of Trento (148 days) and Friuli-Venezia Giulia (193); by contrast, proceedings exceed 700 days in Basilicata (760) and Calabria (755), the latter, however, in sharp decline compared to 2018, with 51 days less.

Figure 2. Average effective duration in days of proceedings defined in ordinary courts by geographic area. Years 2012-2019. Average duration in days



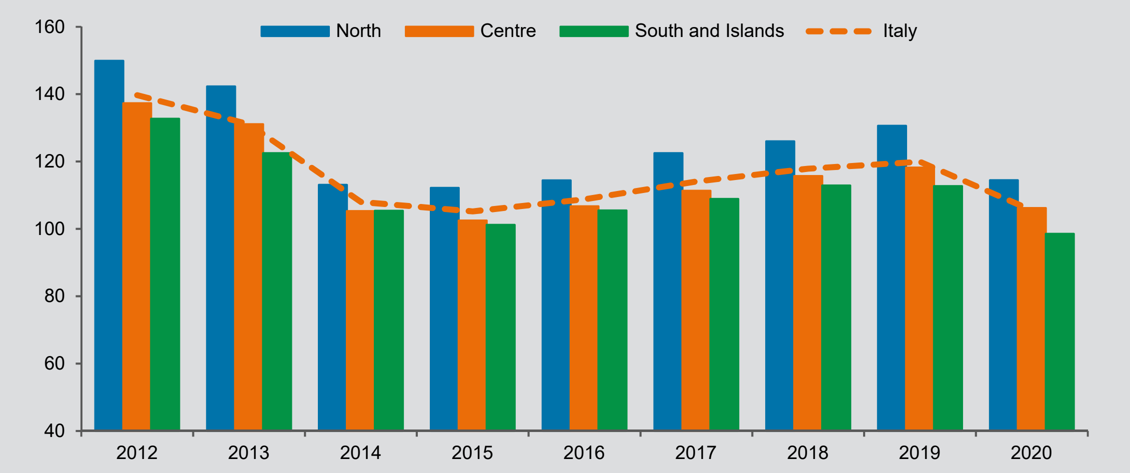
Source: Ministry of Justice, Judicial organisation department

2 Disputes, labour, family and voluntary jurisdiction. See: https://www.giustizia.it/giustizia/it/mg_1_14_1.page?contentId=SST1287132&previsiousPage=mg_2_9_13.

Prison population density decreases in the year of the pandemic

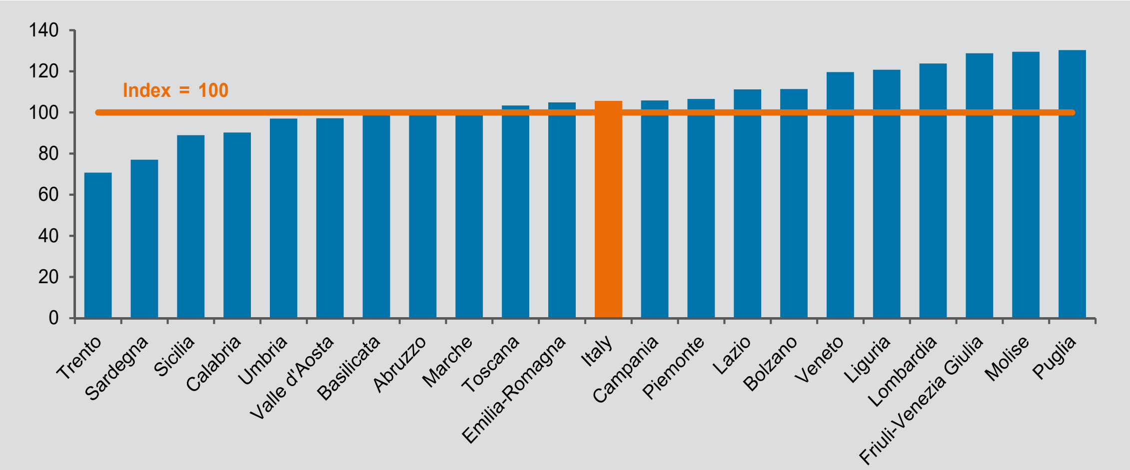
At the end of December 2019, the prison density index in Italy had reached very high levels, with 119.9 inmates per 100 available places. In 2020, penal institutions were also inevitably impacted by the COVID-19 pandemic, and responses were not without controversy. The "Cura Italia" decree of March 2020 introduced measures to contain the infection and reduce crowding, allowing a substantial proportion of inmates to serve the last part of their sentences in home detention. At the end of December 2020, with the number of inmates in penal institutions having fallen to 53,364, the crowding index fell to 105.5 occupied places per 100 (Figure 3). The situation continues to be more serious, overall, in the North (114.4 inmates per 100 places), compared to the Centre (106.2) and the South and Islands (98.2). The highest criticalities, on a regional scale, concern Puglia (130.3), Molise (129.5), Friuli-Venezia Giulia (128.8), Lombardia (123.8) and Liguria (120.7). The number of places occupied is well below 100 in Sicilia (88.9), Sardegna (77) and the Autonomous Province of Trento (70.7).

Figure 3. Prison population density by geographic area. Years 2012-2020. Percentage on the total capacity of penal institutions



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

Figure 4. Prison population density by region. Year 2020. Percentage on the total capacity of penal institutions



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

The advancement of women into top positions of political and institutional representation is slow

The issue of gender equity is fundamental to the concept of well-being. Measuring it in terms of 'representation' can be seen as a proxy for the status and role of women in society. The European Commission's five-year strategy 2020-2025[3] states that "More inclusion and more diversity is essential to bring forward new ideas and innovative approaches that better serve a dynamic and flourishing EU society. (…) Gender equality is a core value of the European Union, a fundamental right and a key principle of the European pillar of social rights". The actions of the strategy will be twofold: on the one hand, targeted measures aimed at achieving gender equality, and on the other hand, greater integration of the gender dimension with other individual characteristics[4]. Their implementation will also be monitored on the basis of the annual EU Gender Equality Index. For Italy, the annual EU Gender Equality Index reached 63.5 points out of 100 in 2018, putting our country in 14th place in the EU, 4.4 points below the EU average. Since 2010, Italy's index has increased by 10.2 points, demonstrating a progress towards gender equality at a faster pace than other Member States, although the road to equality is still long[5]. While progress has been rapid and sustained in some areas of society and the economy, in others, such as political and institutional representation, there are still too few women in leadership or top positions.
In the European Parliament, women's representation is steadily above 30%: in 2020, 39.3% of those elected are women. The Italian women's delegation in the European Parliament, after growing rapidly during the 2014 elections, is close to 40%, almost double the figure of ten years earlier (around 22% in 2011 - Figure 5). A slow but steady increase in the presence of women emerges in Italian decision-making and political institutions at national level. Thanks in part to regulatory interventions on the composition of lists and preferences expressed during the vote[6], the quota of 1 woman every 3 delegates has been exceeded in the national Parliament.
However, the presence of women in Regional Councils is still low and uneven across the territory. The Regional Councils renewed in 2020 brought the share of women elected to a total of 22%, continuing on a very slow path towards gender equality, with the share of councillors increasing by only 1 percentage point per year. In 2020, female representation in Regional Councils increased in Veneto from 21.6% to 35.3%, in Toscana from 26.8% to 35%, in Marche from 19.4% to 29%, in Calabria from 3.2% to 9.7%, in Liguria from 16.1% to 19.4% and in Puglia from 9.8% to 13.7%. It decreased in Campania from 23.5% to 15.7%, in Emilia-Romagna from 36% to 32% and in Valle d'Aosta from 22.9% to 11.4% (Figure 6). The highest number of elected women is to be found in the central regions (32.9%), followed, at a considerable distance, by the regions of the North (23.2%) and those of the South and Islands (15.8%).

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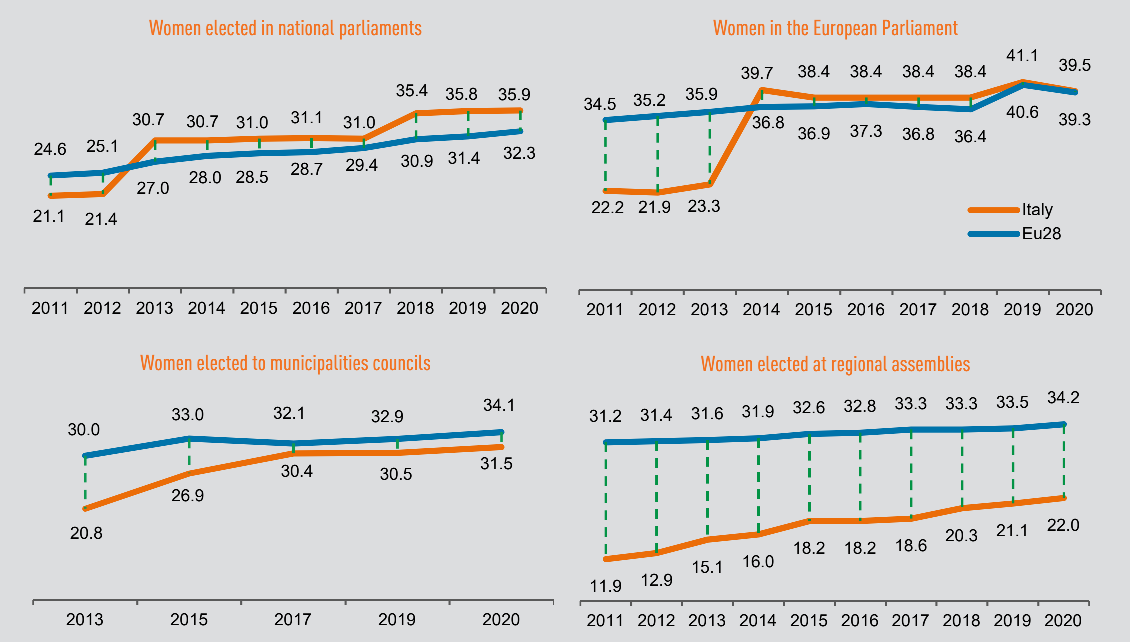
3 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0152&from=EN.

4 Gender mainstreaming is implemented through the cross-cutting principle of intersectionality, i.e. an "analytical tool for studying, understanding and responding to the ways in which sex and gender intersect with other personal characteristics/identities, and how these intersections contribute to unique experiences of discrimination" (See: https://eige.europa.eu/thesaurus/terms/1263).

5 See: https://eige.europa.eu/publications/gender-equality-index-2020-digitalisation-and-future-work.

6 The following have contributed: law 215/2012 on the rebalancing of gender representation in the councils and boards of local authorities and 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.

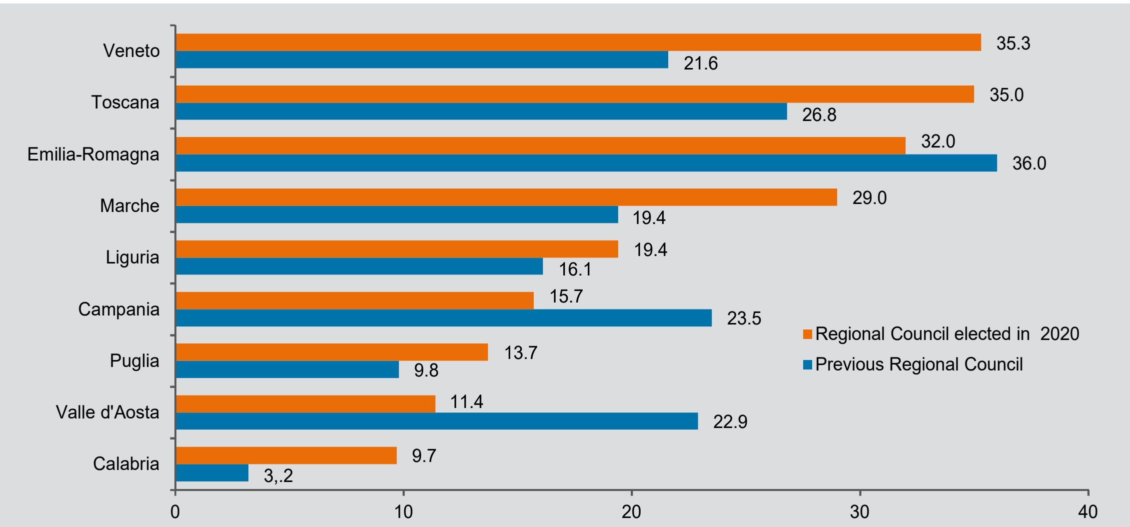
Figure 5. Percentage of women elected in National Parliaments, European Parliament, Municipalities councils and Regional Assemblies in Italy and the Eu28. Years 2011-2020



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

Insufficient female representation is not only a problem in politics, however. In general, the number of women in top positions decreases as the importance and political weight of the institution or organisation increases. In institutions such as the Constitutional Court, the Higher Council of the Judiciary, the various authorities (Privacy, Communications, Competition and the Market) and the diplomatic corps, the representation of women is still small, although slowly increasing. In these institutions as a whole, women holding top positions are just 19.1% (in 2013 they were 12%).

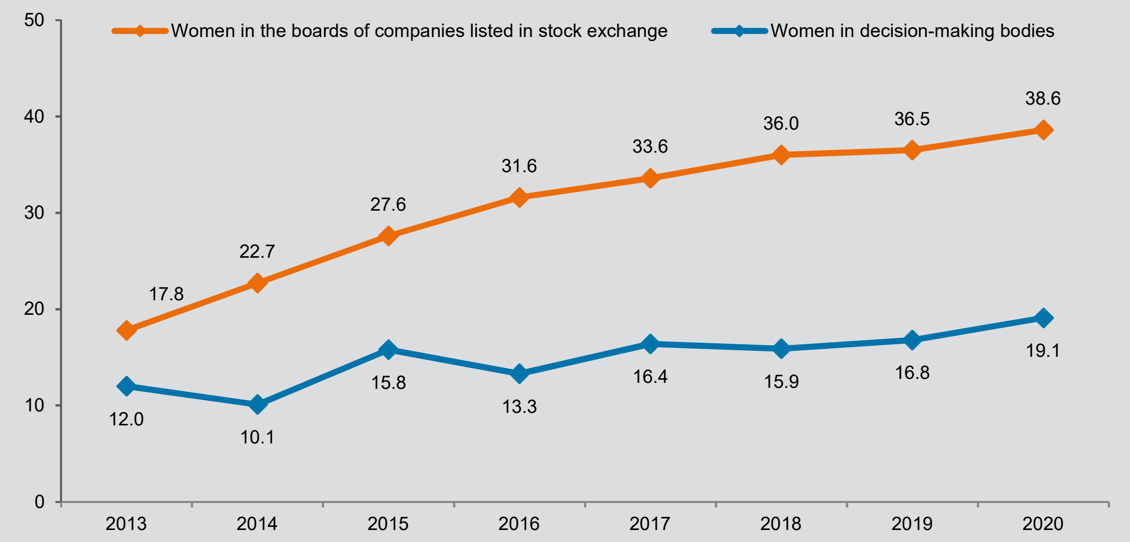
Figure 6. Percentage distribution of women elected to the Regional Councils established in 2020 and comparison with the previous Council



Source: Individual regional councils

On the boards of directors of large listed companies, the positive trend that began in 2013-2014 thanks to the Golfo-Mosca law[7] continues, also thanks to the "extention" to six consecutive terms of office of the law, with an increase in the target proportion of women (from 33% to 40%). In 2020, women account for 38.6% of board members.

Figure 7. Women in the boards of companies listed in stock exchange and in decision-making bodies (a)**. Years 2013-2020. Percentage values**



Source: Various
(a) Bodies considered are: Constitutional court, Magistrates' Governing Council, Italian Regulatory authorities (for Communications, Antitrust, Data protection), Embassies, Consob.

7 The Golfo-Mosca Law (No. 120/2011) on equal access to the management and control bodies of companies listed on regulated markets imposed a quota reserved for the less represented gender of "at least one third" of the members for "three consecutive mandates". The 2020 Budget Law (No. 160/2019) amended the legislation by defining as a quota reserved for the less represented gender "at least two-fifths" of the members for "six consecutive mandates".

Indicators

1. **Voter turnout:** Percentage of eligible voter who cast a ballot in the last election for the European Parliament.
   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 Parliament:** Percentage of women elected in Parliament on total number of MPs.
   Source: Istat, processing on Chamber of Deputies and Senate data.
7. **Women and political representation at regional level:** Percentage of women elected in regional councils on total number of elected people.
   Source: Individual regional councils.
8. **Women in decision-making bodies:** Percentage of women in position of high responsibility within the following bodies: Constitutional court, Magistrates' Governing Council, Italian Regulatory authorities (for Communications, Antitrust, Data protection), Embassies.
   Source: Various.
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 Parliament:** Average age of MPs.
    Source: Istat, Processing on Chamber of Deputies and Senate data.
11. **Length of civil proceedings:** Effective average duration in days of proceedings set up in ordinary courts.
    Source: Ministry of Justice, Judicial organization department.
12. **Prison density:** Percentage of prisoners in penal institutions on the total capacity of penal institutions.
    Source: Istat, Processing on Ministry of Justice-Penitentiary Administration Department data.

Indicators by region and geographic area

REGIONS AND GEOGRAPHIC AREAS	Voter turnout (a)	Trust in the parliament (b)	Trust in judicial system (b)	Trust in political parties (b)	Trust in police and fire brigade (b)	Women and political representation in Parliament (c)
	2019	2020 (*)	2020 (*)	2020 (*)	2020 (*)	2018
Piemonte	64.7	4.5	4.8	3.2	7.7	35.3
Valle d'Aosta/Vallée d'Aoste	51.9	4.2	4.8	3.2	7.5	50.0
Liguria	58.5	4.8	5.0	3.5	7.9	25.0
Lombardia	64.1	4.3	4.6	3.2	7.7	29.8
Trentino-Alto Adige/Südtirol	59.9	4.3	4.9	3.5	7.7	44.4
Bolzano/Bozen	*62.8*	*4.3*	*5.0*	*3.9*	*7.5*	-
Trento	*57.3*	*4.3*	*4.8*	*3.2*	*7.9*	-
Veneto	63.7	4.2	4.7	3.2	7.6	33.8
Friuli-Venezia Giulia	57.0	4.2	4.6	2.9	7.7	35.0
Emilia-Romagna	67.3	4.6	4.8	3.4	7.7	35.8
Toscana	65.8	4.7	5.0	3.5	7.7	33.3
Umbria	67.7	4.7	4.8	3.4	7.6	37.5
Marche	62.1	4.4	4.6	3.3	7.3	37.5
Lazio	53.3	4.6	4.8	3.1	7.4	40.2
Abruzzo	52.6	4.7	4.8	3.3	7.7	23.8
Molise	53.3	4.8	4.7	3.3	7.4	40.0
Campania	47.6	4.8	5.0	3.6	7.0	36.8
Puglia	49.8	4.7	4.9	3.5	7.4	41.3
Basilicata	47.3	4.8	4.9	3.3	7.3	15.4
Calabria	44.0	4.8	5.2	3.6	7.5	41.9
Sicilia	37.5	4.3	4.9	3.1	7.4	43.8
Sardegna	36.3	4.3	4.9	3.0	7.4	28.0
North	63.7	4.4	4.7	3.3	7.7	33.0
Centre	59.3	4.6	4.8	3.3	7.5	37.5
South and Islands	44.7	4.6	5.0	3.4	7.3	37.4
Italy	**56.1**	**4.5**	**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 seats as defined by the regulatory capacity.
(*) Provisional data.

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	2019	2020
15.7	-	-	47.8	195	106.6
11.4	-	-	42.0	136	97.2
19.4	-	-	47.3	244	120.7
24.7	-	-	48.6	257	123.8
25.7	-	-	48.2	171	77.9
25.7	-	-	....	*200*	*111.4*
25.7	-	-	....	*148*	*70.7*
35.3	-	-	47.9	328	119.6
14.3	-	-	51.0	193	128.8
32.0	-	-	49.0	300	104.9
35.0	-	-	47.7	375	103.4
38.1	-	-	46.3	483	97.0
29.0	-	-	45.6	326	100.1
31.4	-	-	49.5	423	111.2
16.1	-	-	46.5	341	100.1
28.6	-	-	46.6	422	129.5
15.7	-	-	47.7	567	105.8
13.7	-	-	44.5	627	130.3
4.8	-	-	47.9	760	99.5
9.7	-	-	45.3	755	90.2
21.4	-	-	44.8	567	88.9
13.3	-	-	49.9	492	77.0
23.2	-	-	48.4	257	114.4
32.9	-	-	48.2	404	106.2
15.8	-	-	46.2	583	98.5
22.0	**19.1**	**38.6**	**47.6**	**421**	**105.5**

7. Safety[1]

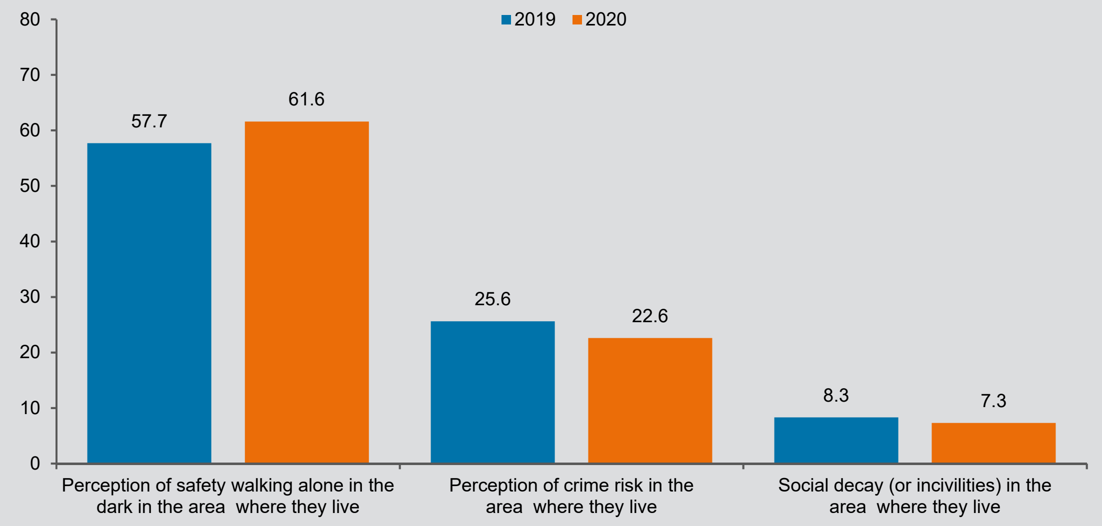
The safety of citizens is a key dimension in the construction of individual and collective well-being. The sense of insecurity of the population and the fear of being victim of criminal acts can greatly influence the personal freedoms of each, the quality of life and development of the territories.
Perception of safety depends not only on the level of crime, but also on the degradation of the context in which people live, on the type of control exercised by the police on the territory, on the sense of personal vulnerability. The issue of physical and sexual violence suffered by women inside and outside the home is also closely linked to personal safety and quality of life.
Objective and subjective indicators that measure the evolution of safety in Italy show a general tendency towards improvement.
In the European context, Italy ranks among the countries with the lowest incidence of homicides, while with regard to burglaries and robberies the rates are still high compared to other countries, despite the improvements achieved in the last decade.
Moreover, deep territorial inequalities persist: homicides are more widespread in the South of Italy, even though they have declined sharply over time, while burglaries and pickpocketing prevail in the Centre and in the North. The level of security perceived by the population is higher in small towns than in large urban areas.
In 2020, the limitations imposed by the lockdown had a positive effect on some forms of crime and on the perception of safety among the population, except in the case of violence against women. The number of telephone calls for help to the public utility number 1522 has risen sharply, partly because of the increase in information and awareness campaigns against violence and stalking promoted in support of women.

Subjective perception of safety improves

An analysis of the perceptions of the population reveals an overall positive trend, both compared to the previous year and analysing long-term data. All the indicators of the perception of safety referring to the area in which people live are improving: the perception of safety when walking alone in the dark increases and the perception of degradation and risk of crime decreases (Figure 1).
In 2020, due in part to the limitations imposed by the pandemic, the positive trend that began in the last three years consolidates.
The percentage of people who say they feel very or fairly safe when walking alone in the dark in the area where they live stands at 61.6% (it was 57.7% in 2019).
Among the positive signs, there is also the decrease in the perception of degradation of the area where people live. In 2020, 7.3% of the population claims to have seen at least one element of decay: people who take or sell drugs, vandalism against the public good, prostitutes looking for clients. This is the lowest value since 2010.

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

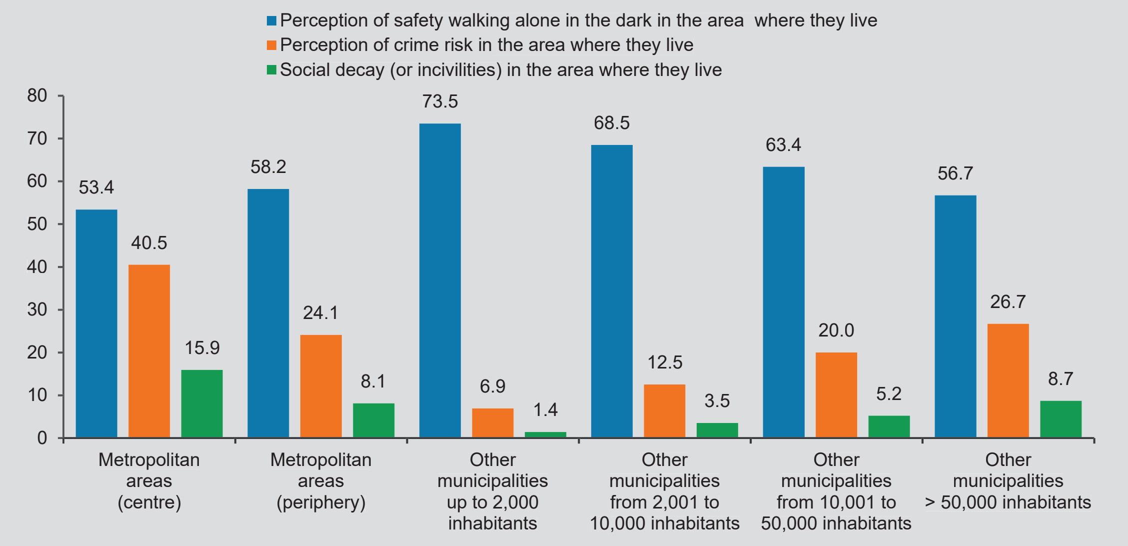
Figure 1. Perception of safety in the area where people live: people aged 14 and over feeling very or quite safe walking alone when it is dark, people aged 14 and over who often see elements of social and environmental decay, households declaring a very high or quite high risk of crime. Years 2019 and 2020 (a)**. Per 100 persons aged 14 and over or per 100 households**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The share of households stating that the area in which they live is very or fairly at risk of crime also declines, standing at 22.6% (it was 25.6% in 2019).
Significant differences emerge in the level of security perceived by the population with respect to the size of the municipality of residence: people residing in municipalities with up to 2,000 inhabitants feel safer, perceive a lower risk of crime, and report less social and environmental degradation, compared with those living in larger municipalities. In municipalities with up to 2,000 inhabitants, the proportion of persons aged 14 and over who are very or fairly safe when walking alone in the dark in the area where they live is 20 percentage points higher than that found in the centres of large urban areas (73.5% vs. 53.4%). Similarly, perception of crime risk is much lower in small municipalities (6.9% vs. 40.5%) as the social decay rate (1.4% vs. 15.9%) (Figure 2).
It is interesting to note, however, that the most significant improvements recorded in the last year are found in the most critical areas, such as the centres of large urban areas.
Perception of safety is not evenly distributed across the population, but it varies by gender, age and educational attainment.
Nearly three-quarters of men feel safe walking alone in the dark in the area where they live compared to just over half of women (51.6%). The situation is also different in relation to different ages: the most insecure are the elderly, while young people and adults perceive safer.
Perceptions of safety are highest among people having completed tertiary education (68.6%), especially males (80.3% compared to 59.4% of female college graduates) and lowest among people with at most a lower secondary school diploma (56.5%), especially among females (46.5%).

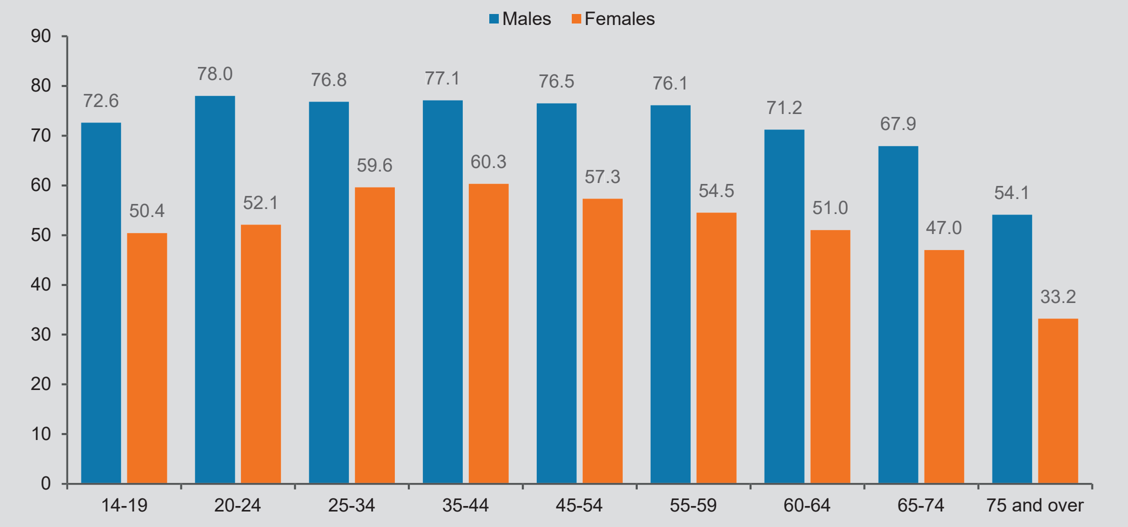
Figure 2. Perception of safety in the area where people live: people aged 14 and over feeling very or quite safe walking alone when it is dark, people aged 14 and over who often see elements of social and environmental decay, households declaring a very high or quite high risk of crime by municipality size. Year 2020 (a)**. Per 100 persons aged 14 and over or per 100 households**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Between 2019 and 2020, perceptions of safety increase among both males and females and across all age groups up to age 74, with the greatest improvement among those aged 35-59 (Figure 3).

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 2020 (a)**. Per 100 persons aged 14 and over**



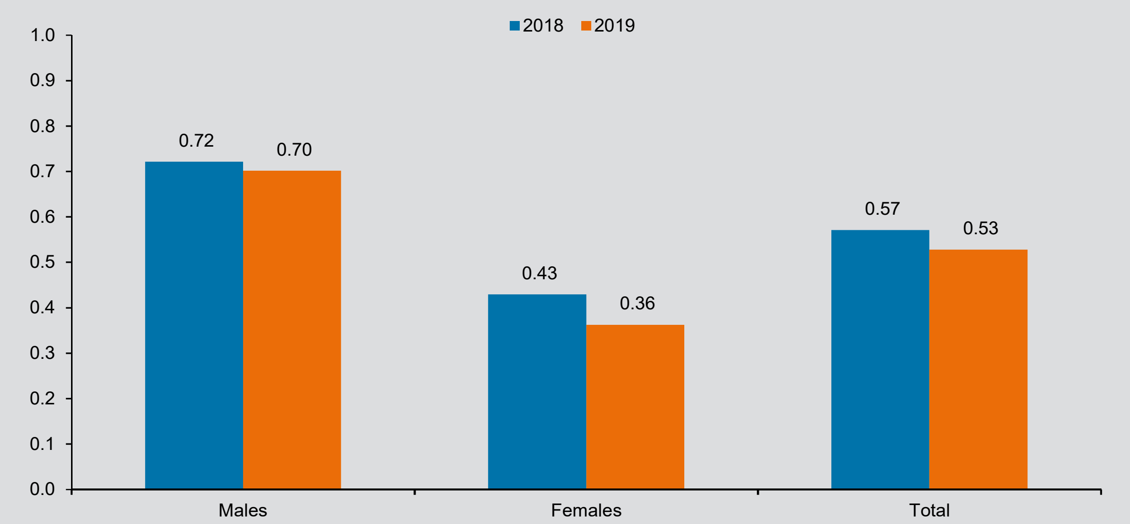
Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Decline in homicides continues, but only men's homicides decline in the first 6 months of 2020

During the first 6 months of 2020, the overall number of homicides decreased by 18.6% compared to the same period in 2019 (131 homicides in 2020 compared to 161 in 2019). However, this decrease only affected male victims, who decreased by 31.4%, while female victims experienced a slight increase (+5.4%)[2]. The same trend is seen for homicides occurring in the family/affective sphere, which decreased by 5.5% (69 homicides in 2020 compared to 73 in 2019), but again, the decrease affected only men (-43%), compared to a 17.8% increase in homicides of women occurring in the family/affective sphere (53 homicides in 2020 compared to 45 in 2019).
In the first 6 months of 2020, in full lockdown, the proportion of women killed out of the total reached 45%, while it was about one-third of the victims in the first 6 months of 2019.
The data for the first half of 2020 confirm that the majority of homicides of women occur in the family/affective sphere: 89.8% of women, in fact, were killed in this context, while the share of homicides of men occurred in this context is much lower at 22.2%. Moreover, the analysis of data related to the author of the homicide shows a growth by 12.5% of women killed by partners or ex-partners.
If we consider 2019, 315 homicides were committed in Italy, 0.53 per 100 thousand inhabitants. The homicide rate recorded a further decrease compared to 2018 when it stood at 0.57 per 100 thousand inhabitants (for a total of 345 homicides), confirming the long-term downward trend.
The decrease was concentrated in the regions of the South, while in the Centre and in the North the homicide rate remained stable.
The South continues to register the highest rate of homicides (0.70 compared with 0.44 per 100 thousand inhabitants in the Centre-North), despite the fact that in the long term the greatest decrease is observed in this geographic area.
In Italy, the homicide rate is very small compared to other European countries. In fact, Italy ranks among the countries with the lowest incidence of homicides, with a value that is far below the European average (0.57 homicides per 100 thousand inhabitants in 2018 compared to an average of Eu28 countries of 0.93). In 2019, there were 204 male and 111 female homicide victims (0.70 and 0.36 homicides per 100 thousand inhabitants of the same sex, respectively). Between 2018 and 2019, the downward trend in the homicide rate of both men (it was 0.72 in 2018) and women (0.43 in 2018) is confirmed (Figure 4).
Although for males the incidence of homicides is still about double that for women, progress over time has been notable. For women, who started from a more favourable situation, the decrease has instead followed a much slower pace and it is due to a reduction in the number of victims by unknown or unidentified perpetrators, rather than to a decrease in the number of victims within the family.

2 Source: Ministry of the Interior, https://www.interno.gov.it/it/stampa-e-comunicazione/dati-e-statistiche/report-violenza-genere-e-omicidi-volontari-vittime-donne.

Figure 4. Homicide rate by gender - Years 2018-2019. Per 100,000 inhabitants of the same gender

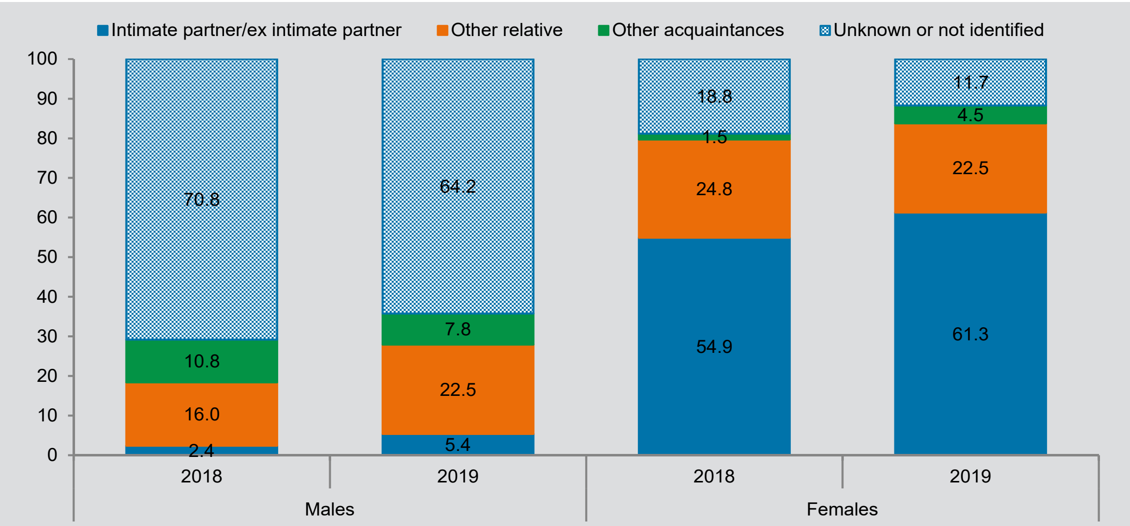


Source: Ministry of the Interior, Database of the Central Directorate of Criminal Police

When examining the relationship between the perpetrator and the victim of homicide, strong differences remain between women and men: while women are killed mainly within the family, men in most cases are victims of an unknown perpetrator or one not identified by law enforcement (Figure 5).

In 2019, 88.3% of female homicides result from a known person. This figure increased comparing to 2018 when it stood at 81.2%. Specifically, more than 6 in 10 women were killed by their current or former partner, 22.5% by a family member (including children and parents), and 4.5% by another person the woman knew (friends, colleagues, etc.). The situation is very different for men: in 2019, only 35.7% were killed by a known person (only 5.4% by a partner or former partner), while 64.2% were killed by a stranger or perpetrator not identified by police.

Figure 5. Victims of homicide by relationship with the murderer and gender (a)**. Years 2018 and 2019. Per 100 victims of the same gender**



Source: Ministry of the Interior (DCPC), homicide database

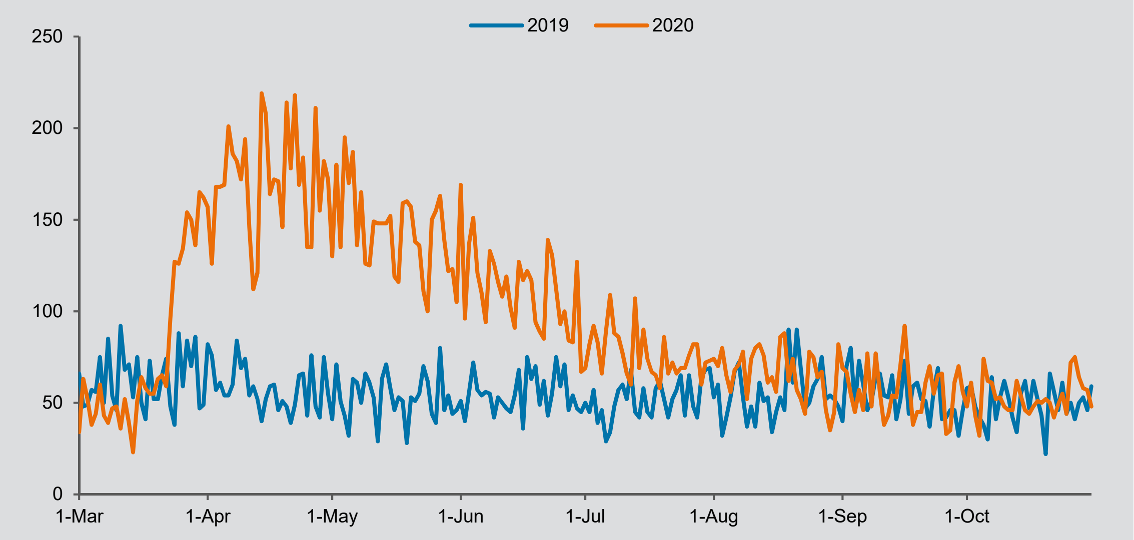
(a) Figures related to the homicide victim and perpetrator relationship are extracted from the homicide database of the Ministry of the Interior (DCPC). Since this data are used for operational purposes, it is subject to changes that may emerge in subsequent extractions.

During March-October 2020, there was a sharp increase in women's requests for help to 1522 helpline

During the lockdown, social isolation, economic difficulties, intra-family tensions, as well as reduced accessibility to prevention and protection services, may have increased the risk of violence against women, which, as we have seen, develops mainly within the home.

During the lockdown, the public utility number 1522[3] against violence and stalking, made available by the Department for Equal Opportunities of the Presidency of the Council of Ministers, has represented a tool of great support to victims of violence, also thanks to the information and awareness campaigns against violence and stalking. These campaigns, broadcast on television channels and relaunched on social media between the end of March and April 2020, reinforced the message of the importance of seeking help to get out of violence. Data collected by 1522 show a large increase in the request for help during the lockdown. Beginning on March 23, the number of valid calls to 1522 showed an exponential increase before decreasing with reopenings occurred from May onward[4] (Figure 6).

Figure 6. Number of valid calls to the 1522 number. Years 2019 and 2020. Reference period March-October. Absolute values



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

The number of valid calls by phone and via chat in the period from March to October 2020 increased significantly over the same period last year (+71.9%), from 13,424 to 23,071 (Figure 7). The growth in chat requests for help quadrupled from 829 to 3,347 messages.

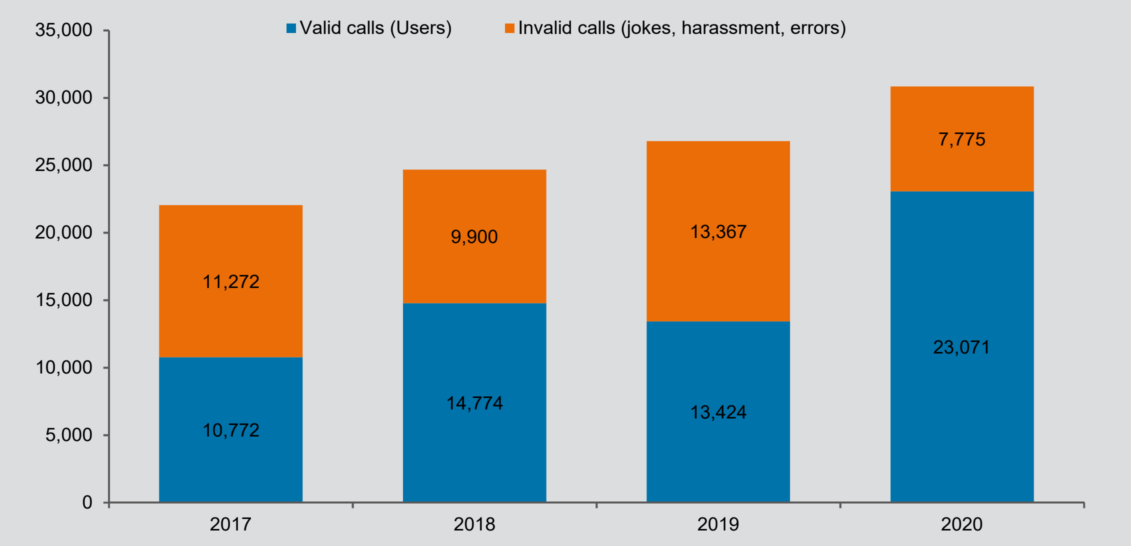
Among the reasons for contacting the toll-free number, "reports of violence" tripled, while calls for "requests for help by victims of violence" and "requests for help by victims of stalking" doubled (Figure 8).

3 The public utility number 1522 is active 24 hours a day, every day of the year; it is free of charge from fixed and mobile networks. Reception is available in Italian, English, French, Spanish and Arabic.

4 Sources: Istat, Dataset the helpline 1522 during the pandemic period (March-October 2020) https://www.istat.it/en/archivio/250811; Ministry of the Interior, https://www.interno.gov.it/it/ stampa-e-comunicazione/dati-e-statistiche/report-violenza-genere-e-omicidi-volontari-vittime-donne.

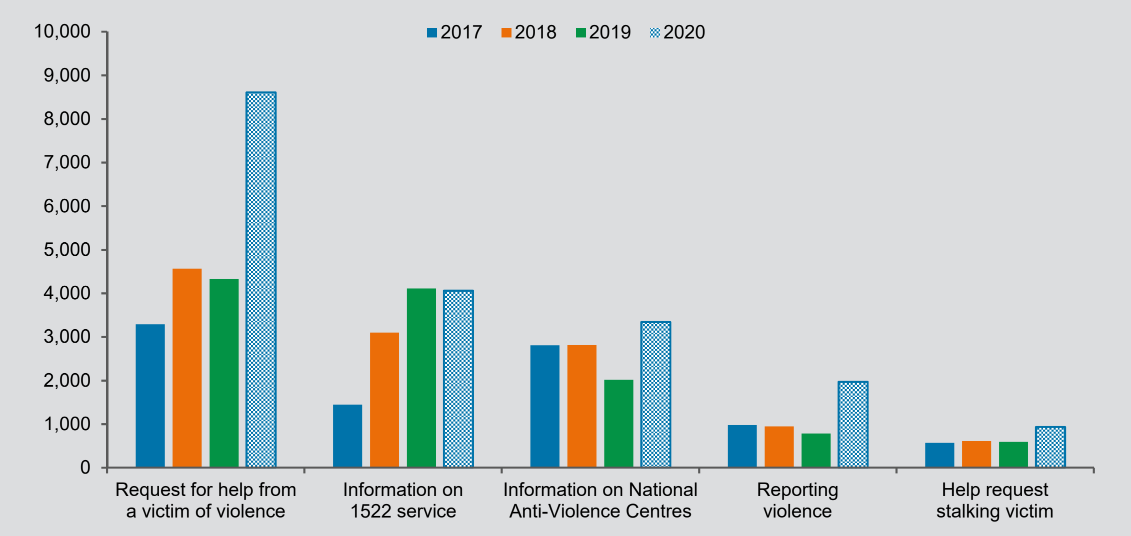
Together, these three reasons account for 49.9% of valid calls (a total of 11,511) and, in the period between March and October 2020, grew 102% overall compared to the same period in 2019. Calls for information about National Violence Centres are also growing (+65.7%).

Figure 7. Number of valid and invalid calls (misdials, pranks, and harassment) to the 1522 number. Years 2017-2020. Reference period March-October. Absolute values



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

Figure 8. Reasons for calling the 1522 number. Years 2017-2020. Reference period March-October. Absolute values



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

The violence described by those seeking help and support is primarily physical and psychological (86.2% of victims).
Comparing the March-October period of 2020 with the same period of the previous year, we see a growth in physical violence in particular and a slight increase in sexual violence.
2020 data confirm that the place where violence most frequently occurs is the home of the victim: 85.6% of victims declare, in fact, that the violent act occurred in their own home.

The share of victims who report to the police the violence suffered continues to remain very low: only 14.3% claim to have filed a complaint to which must be added a 2.6% of victims who have filed a complaint but then withdrawn it.
Among those who do not denounce the violence suffered, more than half of the victims indicate fear or motivations that fall within the family context: 28.7% indicate fear in general or fear of the reaction of the author of the violence, while the negative consequences that can be generated in the family context are declared by 26.1% of the victims. 55% of the victims state that they have children: in 5 cases out of 10 the children have witnessed the violence and in 10.4% they have suffered the violence.
Despite the increase in calls for help to 1522, during the lockdown period there is no increase in the number of reports to the police of “spy crimes” related to gender-based violence[5] such as acts of persecution, mistreatment of family members and cohabitants and sexual violence. These crimes, in fact, decrease during the months of lockdown: in particular, the reports of persecutory acts and sexual violence record a consistent decrease in the months of March and April and then increase again in the months of May-June, without, however, reaching the levels reached in the same period of the previous year.

Burglaries, pickpocketing and robberies continue to decline, not just under the lockdown

The data of citizen complaints to the Police Forces and those of the investigative activity of the Police Forces show a strong reduction in crimes in the first half of 2020 compared to the same period of the previous year (Figure 9).
An expected result, a direct consequence of the travel restrictions imposed by the health emergency, which mainly concerned predatory crimes: the number of thefts decreased (-51.9% of pick pocketing and -39.3% of the burglaries) and that of robberies (-29.3%). On the contrary, computer crimes registered an increase (+24%).
Restrictions on freedom of movement were an exceptional occurrence, which only temporarily affected certain forms of crime and only limited to the period of closure: with the gradual reopening and relaxation of restrictive measures, in fact, crimes began to rise again.

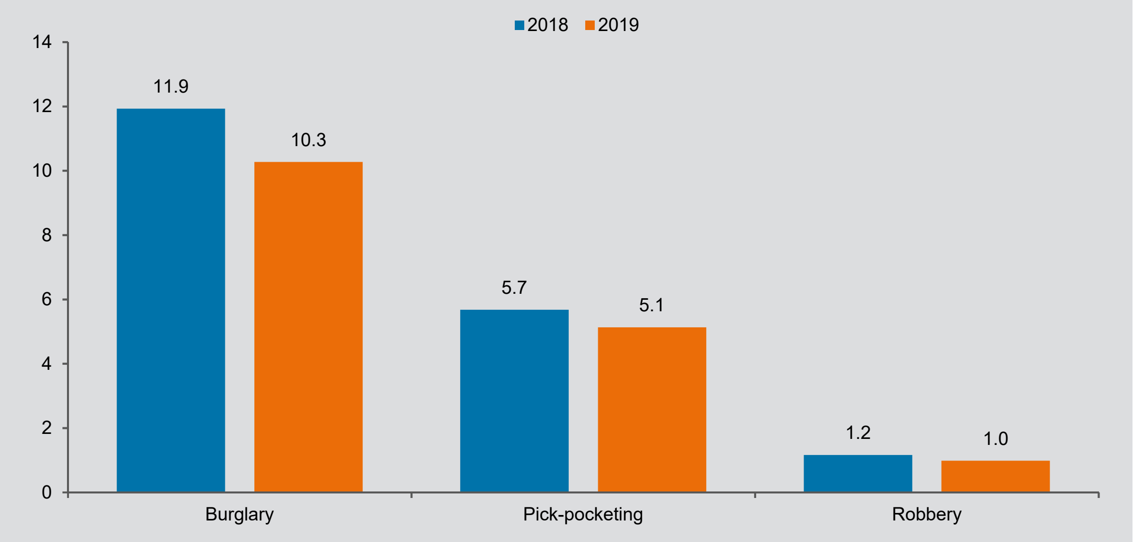
5 The Central Directorate of the Criminal Police of the Department of Public Security, the Criminal Analysis Service carries out an analysis of all criminal episodes related to gender violence. In particular, the so-called “spy crimes” related to gender violence are analyzed, including persecutory acts, mistreatment of family members and cohabitants and sexual violence.

Figure 9. Crimes reported or investigated by Police. Years 2019 and 2020 (a). Reference period January-June. Absolute values

Source: Ministry of the Interior
(a) 2020 data are provisional.

Data disaggregated by month show a sharp decline in the number of burglaries, pick pocketing, and robberies during the lockdown period with the lowest peak in April and a gradual recovery beginning in May. In June 2020, the number of robberies returned almost to June 2019 levels, while burglaries and especially pick pocketing continued to be affected by the lockdown in May and June 2020 as restrictive measures gradually began to decline. In June 2020, however, the number of residential burglaries and especially pick pocketing were still lower than in the same period in 2019.
Cyber frauds and cybercrimes were much less affected by the lockdown period: only in March 2020 were they lower than in the same month of 2019, and in April they started to rise again. In April-June, the values recorded in 2020 are higher than in 2019, partly reflecting the increased use of computer equipment.
Victim rates for 2019 also show that predatory crimes (burglary, pickpocketing, and robbery) continue a downward trend: in 2019, the victim rate for burglary stands at 10.3 per 1,000 households, compared to 11.9 in 2018, pick pocketing stands at 5.1 victims per 1,000 population (5.7 in 2018), and robbery stands at 1 victim per 1,000 population (1.2 in 2018) (Figure 10).

Figure 10. Households that were victims of burglaries and persons that were victims of robberies and pickpocketing. Year 2019. Burglaries per 1,000 households, and robberies and pickpocketing per 1,000 population



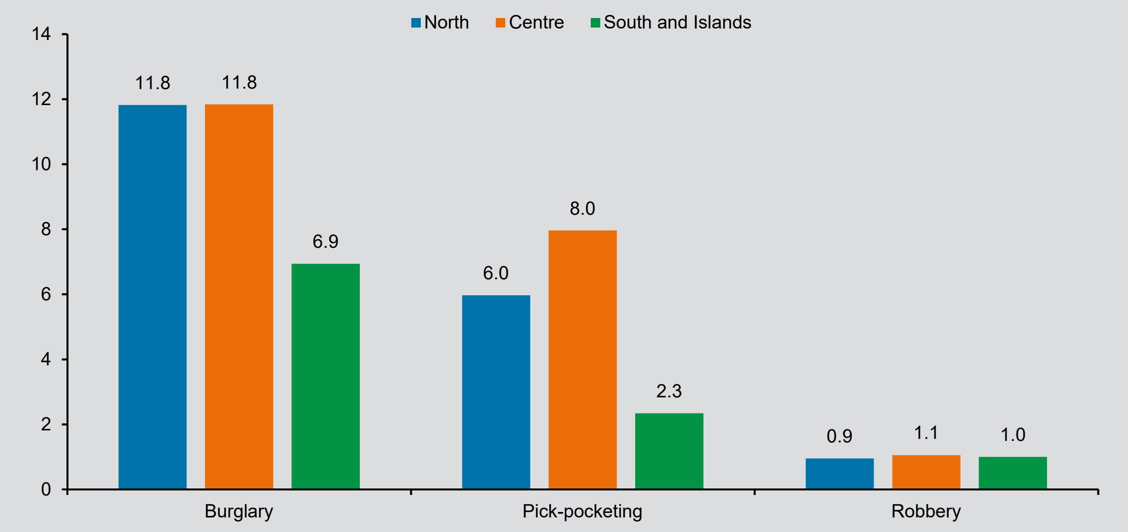
Source: Istat, processing of data on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey

However, compared to the European context, Italy ranks among the countries with a problematic situation (with respect to police reporting data)[6]. According to the latest data available for European comparison, in 2018, with 316 reported residential burglaries per 100 thousand inhabitants, our country ranks seventh in the Eu28 ranking, while with regard to robberies[7] Italy occupies the eighth position with 51 reported robberies per 100 thousand inhabitants.
Predatory crimes are distributed differently throughout the territory. Victims of pickpocketing in the Centre are 3.4 times higher than in the South: 8 versus 2.3 victims per 1,000

6 Data for each country could also reflect differences in citizens' willingness to report to the police, regulatory peculiarities and the procedural and organisational rules of individual Countries.
7 The figure refers to the sum of robberies and pick pocketing.

inhabitants. Burglaries are more widespread in the Centre-North, where there are 11.8 victim per 1,000 households, against 6.9 in the South. For robberies, differences are much smaller: the highest value is registered in the Centre with 1.1 victims per 1,000 inhabitants and the lowest in the North with 0.9 victims, while the South is in an intermediate position (1 victim per 1,000 inhabitants) (Figure 11).

Figure 11. Households that were victims of burglary and persons that were victims of robbery and pickpocketing by geographic breakdown. Year 2019. Burglaries per 1,000 households, and robberies and pickpocketing per 1,000 population



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

Indicators

1. **Intentional homicide rate:** Number of intentional homicide on total population per 100,000.
   Source: Ministry of the Interior - Database of the Central Directorate of Criminal Police
2. **Burglary rate:** 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 on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
3. **Pick-pocketing rate:** 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 on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
4. **Robbery rate:** 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 on crimes reported to Police Forces (Ministry of Interiors) and data on Citizens' Safety Survey.
5. **Physical violence rate:** 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 rate:** 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 rate:** Percentage of women aged 16-70 victim of physical or sexual violence by the partner or ex-partner in the last 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.
   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 rate:** 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) rate:** 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 AND GEOGRAPHIC AREAS	Homicide rate (a) 2019	Burglary rate (b) 2019	Pick-pocketing rate (c) 2019	Robbery rate (c) 2019	Physical violence rate (d) 2014	Sexual violence rate (d) 2014
Piemonte	0.6	12.2	6.1	1.0	6.3	6.2
Valle d'Aosta/Vallée d'Aoste	0.0	4.7	0.8	0.3	7.0	3.9
Liguria	0.5	8.9	6.1	0.9	7.8	7.6
Lombardia	0.4	11.5	6.5	1.1	6.1	6.6
Trentino-Alto Adige/Südtirol	0.4	9.4	2.7	0.5	6.8	5.1
Bolzano/Bozen	*0.2*	*9.1*	*3.5*	*0.6*	*6.9*	*5.9*
Trento	*0.6*	*9.7*	*1.9*	*0.5*	*6.7*	*4.3*
Veneto	0.3	12.0	5.1	0.6	5.0	6.2
Friuli-Venezia Giulia	0.3	8.6	2.0	0.5	5.9	5.9
Emilia-Romagna	0.5	14.7	7.6	1.1	8.2	6.7
Toscana	0.4	16.4	9.7	1.1	8.9	4.5
Umbria	0.6	14.8	3.9	0.6	8.0	6.9
Marche	0.3	9.5	1.8	0.4	7.8	5.0
Lazio	0.5	9.1	9.1	1.3	9.1	6.8
Abruzzo	0.5	8.8	1.8	0.4	9.3	9.1
Molise	0.0	6.3	1.5	0.2	7.7	7.1
Campania	0.6	6.7	4.2	2.1	8.4	8.8
Puglia	0.7	8.5	1.8	0.7	6.8	5.3
Basilicata	0.2	3.8	0.8	0.2	4.3	6.5
Calabria	1.5	5.2	0.8	0.3	4.6	4.7
Sicilia	0.6	7.2	2.0	0.8	5.7	5.2
Sardegna	0.8	5.1	1.0	0.4	6.6	5.2
North	0.4	11.8	6.0	0.9	6.4	6.4
Centre	0.4	11.8	8.0	1.1	8.8	5.9
South and Islands	0.7	6.9	2.3	1.0	6.9	6.5
Italy	**0.5**	**10.3**	**5.1**	**1.0**	**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 rate (e) 2014	Worries of being victim of a sexual violence (f) 2016	Perception of safety when walking alone in the dark (f) 2020 (*)	Concrete fear rate (f) 2016	Social decay (or incivilities) rate (f) 2020 (*)	Perception of crime risk (g) 2020 (*)
4.7	33.7	61.9	2.6	8.1	18.9
3.6	16.3	79.3	4.7	2.3	7.2
6.2	26.1	69.4	5.0	4.5	17.8
4.6	32.4	61.3	9.5	8.9	24.4
4.5	19.5	75.0	4.6	3.5	9.9
4.9	*20.3*	*73.3*	*5.0*	*3.5*	*10.5*
4.2	*18.6*	*76.6*	*4.3*	*3.5*	*9.2*
4.4	29.9	65.3	7.6	4.6	19.6
3.0	26.0	67.8	4.3	2.5	10.4
5.9	28.5	57.7	8.5	8.6	25.2
4.9	29.1	65.3	6.4	7.7	18.6
5.2	26.5	63.8	5.0	4.3	18.4
4.3	19.7	67.0	6.5	4.3	18.1
5.7	37.8	53.0	7.9	12.9	30.9
7.6	28.5	63.6	4.9	6.3	18.6
6.9	23.1	73.6	4.6	2.5	8.5
5.8	23.1	55.3	5.2	7.3	34.6
4.6	22.2	61.8	5.8	6.5	26.6
4.4	24.6	79.6	6.9	2.4	11.4
2.4	34.4	68.3	4.7	5.4	18.3
4.6	24.1	58.5	4.3	5.5	19.6
4.4	23.0	70.9	3.8	4.2	10.1
4.8	30.3	62.9	7.2	7.2	21.2
5.2	31.9	59.4	7.0	9.5	24.6
4.9	24.6	61.3	4.9	6.0	23.5
4.9	**28.7**	**61.6**	**6.4**	**7.3**	**22.6**

8. Subjective well-being[1]

Subjective well-being is one of the fundamental dimensions on which the Bes framework is based. It provides a synthetic assessment of well-being through the evaluations and perceptions that individuals express about their lives in general and in specific areas.
In Italy, life satisfaction levels are lower than the European average, although showing a general improvement in recent years. Despite the strong impact of the COVID-19 epidemic on everyone's life, the indicators of satisfaction do not worsen in 2020. This is probably because the comparison with the difficult context surrounding us has led people to relativise the judgement on the quality of their life, with a slightly positive effect on the percentage of those who consider themselves to be very satisfied with their life. The impact of the uncertainty of the current situation, from the point of view of health, economic conditions and labour market, emerges instead when considering indicators on future prospects, with higher proportions of the population being concerned about the next five years. A concrete assessment of the effects of the pandemic on the components of subjective well-being will be possible only in a few years' time.
The analysis of the indicators in the domain examines the various aspects by population groups in order to highlight, from a cross-sectional perspective, critical points and strengths.

Slight increase in the proportion of people who are very satisfied with their lives, but growing concern about future prospects

In 2020, less than half of the population (44.5%) rate their lives positively, giving a score between 8 and 10 to their life satisfaction. In the European comparison, which was only possible until 2018, the average life satisfaction score in Italy is among the lowest (see Bes Report 2019), with an improving trend since 2017, which was not interrupted in the year of the pandemic. Even in 2020, in fact, a slight increase in the percentage of very satisfied with their lives is observed (it was 43.2% in 2019).
In contrast, the critical situation brought about in the Country by the COVID-19 epidemic has had a negative impact on future prospects. Indeed, the percentage of people who believe that their situation will improve in the next five years (30.1% in 2019) has fallen to 28.9%, after growing steadily since 2016. At the same time, the percentage of individuals who believe their situation will worsen in the next 5 years, after years of decline, increases in 2020 in the Centre-North.
This seems to highlight that while the pandemic has led individuals to relativise their situation in relation to the current context, it is perceived as an event whose effects will influence future prospects.
Many hypotheses can explain these trends. Some factors, identified in previous studies, that may mitigate the impact of the perceived severity of the epidemic situation on well-being are an increased sense of community[2] and the capacity of self-control as a resilience factor[3].

1 This chapter was edited by Leonardo Salvatore Alaimo and Alessandra Tinto, with contributions from: Lorena Di Donatantonio and Romina Fraboni.

2 Lau, A.L., I. Chi, R.A. Cummins, T.M. Lee, K.L. Chou, and L.W. Chung. 2008. The SARS (Severe Acute Respiratory Syndrome) pandemic in Hong Kong: Effects on the subjective wellbeing of elderly and younger people. Aging and Mental Health, Volume 12, Issue 6: 746–760.

3 Li, J.-B., A. Yang, K. Dou, and R.Y. Cheung. 2020. Self-control moderates the association between perceived severity

A further aspect that deserves attention is the mechanism of formulating judgements of satisfaction on the basis of one's own life experiences and knowledge of the experiences of others which are taken as reference[4]. Especially in the initial period of the pandemic, the comparison with the situation around us may have led to a shift upwards of one's own scale of judgement. Other elements that may have played a role are subjective aspects related to satisfaction with family ties. The lockdown period, which forced people to stay at home, was also an opportunity to experience everyday life within the family, and for parents to spend more time with their children, as confirmed by the results of the "Diary of the day and activities at the time of the coronavirus' survey"[5]. This hypothesis would not only explain the general increase in life satisfaction, but would also provide an explanation for the drop in the percentage of people who are very satisfied observed among those living alone.

Decreased percentage of very satisfied with life among people living alone and among the self-employed

The trend described in the last year is common to the different population groups; however, there are some critical situations. In particular, the percentage of people who are very satisfied decreases comparing to 2019 among people who live alone. Only 35.8% of them (it was 37.3% in 2019) refer to be very satisfied with their lives compared, for example, with almost half of those living in a family of four (Figure 1). Isolation due to lockdown affected those living alone the most, and the share of very satisfied fell, in particular, among adults living alone (e.g. between 2019 and 2020 the share fell by 9 percentage points among women and 10 points among men aged 55-59), but also among young women aged 20-34 living alone (-17 p.p. compared to 2019) and among men aged 65 and over (-4 p.p.).
Moreover, while the proportion of those who are very satisfied increases among the employees, it decreases among self-employed women, going from 45.1% to 42.9%.
A further critical element for employed people emerges with reference to the percentage of those who believe that their situation will improve in the next 5 years, which falls particularly among this population group, and even more so among the self-employed (among whom it falls from 36.5% in 2019 to 31.2% in 2020), who are probably affected by the perception of greater insecurity in their jobs.
Differences by employment status remain marked: among the unemployed the share of those who are very satisfied with their lives is considerably lower than among the employed (-20 points among males, -13 points among females). The positive change recorded in 2020, however, is transversal by employment status, further confirming the hypothesis that, also in this case, other aspects guiding individual evaluations had a relatively higher weight than objective aspects.

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of the coronavirus disease 2019 (COVID-19) and mental health problems among the Chinese public. PsyArXiv. https://doi.org/10.31234/osf.io/2xadq.

4 Sen, A. 2002. Health: perception versus observation. BMJ: British Medical Journal, 324(7342): 860-861. Beegle, K., K. Himelein, and M. Ravallion. 2012. Frame-of-reference bias in subjective welfare. Journal of Economic Behaviour & Organization, Volume 81, Issue 2: 556-570.

5 https://www.istat.it/it/archivio/243357.

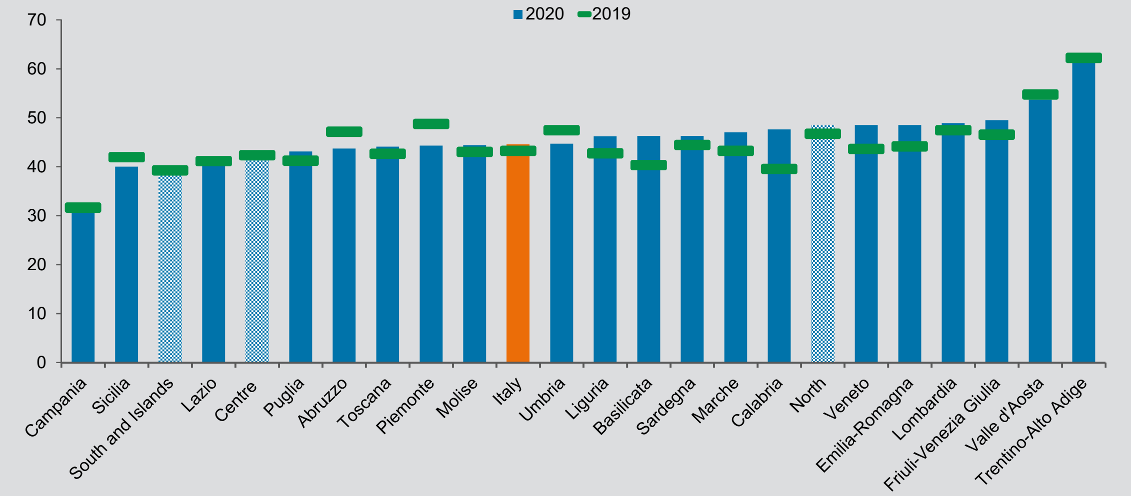
Figure 1. People aged 14 and over expressing a high score (8-10) of life satisfaction, by number of household members and gender. Year 2020 (a). Percentage values

Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

With the exception of Piemonte and Abruzzo, life satisfaction does not fall, but the percentage of pessimists increases in the North and in the Centre

Beyond the differences in levels, the increase in life satisfaction in 2020 is common to all areas of the Country, with some exceptions at regional level. Again, the absence of a negative effect of the COVID-19 pandemic on life satisfaction seems to be confirmed. Despite the fact that it was mainly the northern regions that suffered the dramatic consequences of the first wave of the pandemic, all of them show higher than the national average values and almost all of them register an improvement compared to the previous year (with the exception of Piemonte, which goes from 48.7% in 2019 to 44.3% in 2020).

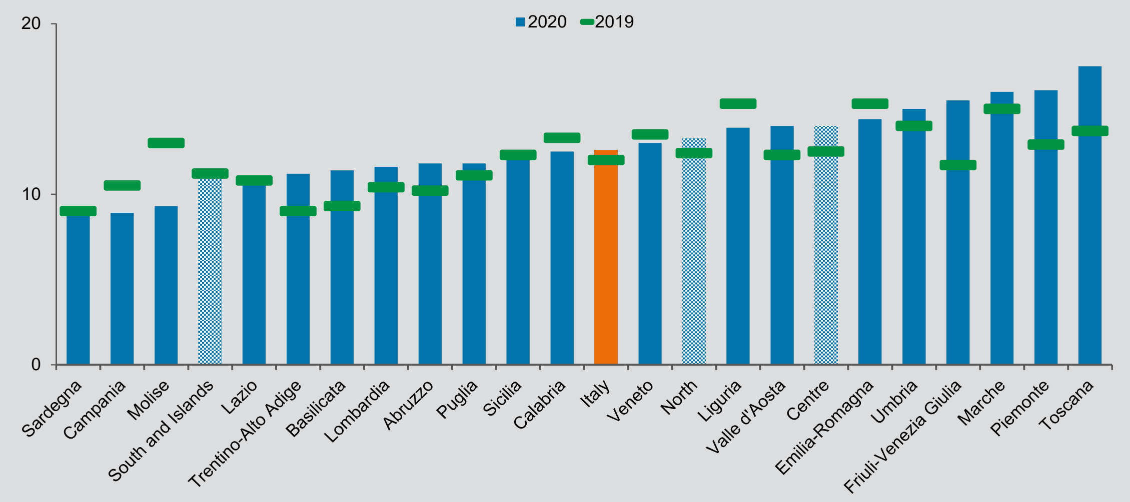
Figure 2. People aged 14 and over expressing a high score (8-10) of life satisfaction, by region and geographic area. Years 2019-2020 (a). Percentage values



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Apart from Piemonte, only in Abruzzo a significant worsening in the value of this indicator is recorded, going from 47.1% in 2019 to 43.7% (Figure 2)[6].
The known differences across regions are thus maintained, with a higher percentage of people who are very satisfied with their lives in the North (48.4%), almost 4 percentage points higher than the national average, and lower levels in the Centre and in the South and Islands (the percentage is, respectively, 43% and 40%).
While there are no substantial territorial differences compared to 2019 in the variation in the positive assessment of future prospects, the percentage of people who assess them negatively is increasing in the North (13.3%, an increase of 1 percentage point compared to 2019) and in the Centre (14%, an increase of 1.5 percentage points) (Figure 3). The COVID-19 pandemic, which, at least in the first phase, mainly affected the Central-Northern regions of the Country, seems to have left its mark on individuals' concern about their future prospects.

Figure 3. People aged 14 and over who think their situation will get worse in the next 5 years by region. Years 2019-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Regional data show the most significant increases in the share of pessimists compared to 2019 in Tuscany (up 4 percentage points), Friuli-Venezia Giulia (up almost 4 percentage points) and Piedmont (up from 12.9% to 16%). At the opposite, in Molise the share of pessimists significantly drops (from 13% to 9.3%).

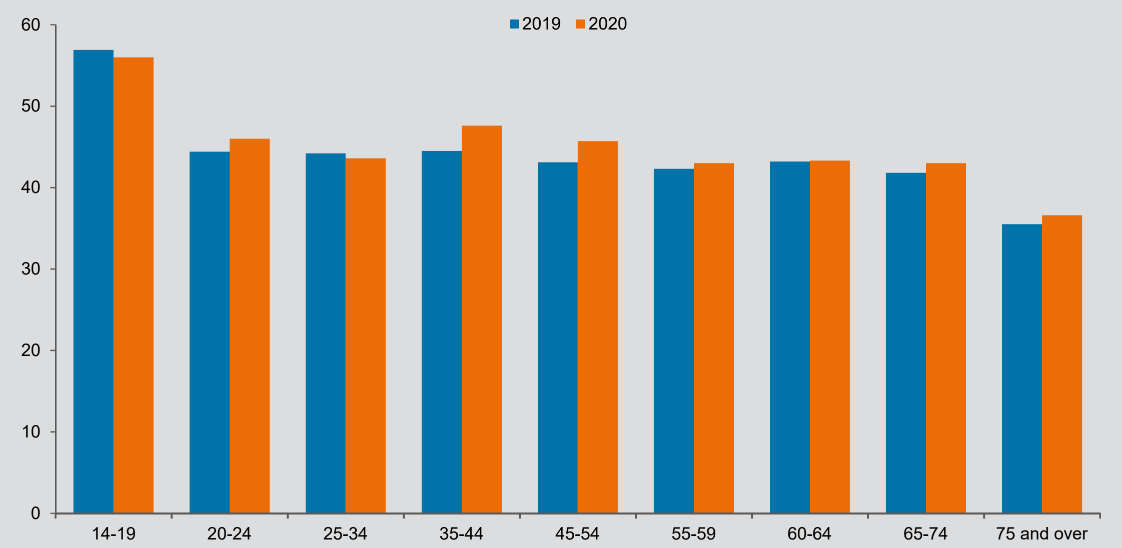
The gap between the subjective well-being of young and old people remains unchanged

The percentages of people who are very satisfied with their lives are stable or slightly improved compared to the previous year for all age groups, especially among people aged 35-54, registering an increase of 3 percentage points compared to the previous year. (Figure 4). At the same time, people aged 35-44 recorded the largest drop in the share of optimists over the two-years (less than 2 percentage points compared with 2019) (Figure 5).
The gap between the highest (people aged 14-19, with the 56%) and the lowest percentage

6 Differences by less than 1 percentage point are not to be considered statistically significant.

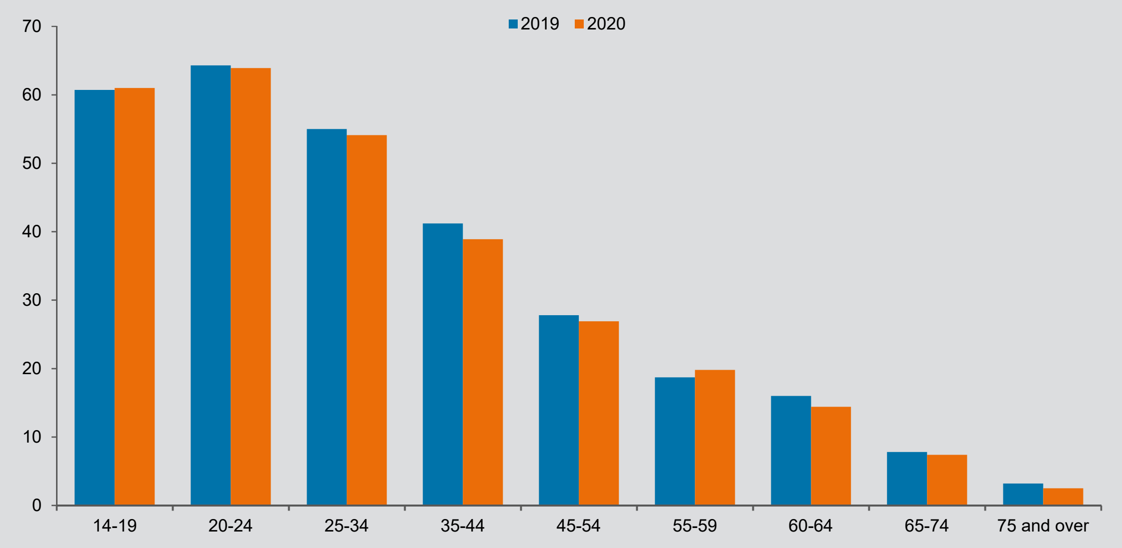
of satisfied (people aged 75 and over, with the 36.6%) remains almost unchanged, with a gap of almost 20 percentage points. Expectations of improvement also remain much higher among young people, while they decline as they get older: almost two out of three young people aged 20 to 24 (63.9%) express a positive view of their future prospects, falling to just 2.5% among the people aged 75 and over.

Figure 4. People aged 14 and over expressing a high score (8-10) of life satisfaction by age groups. Years 2019-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Figure 5. People aged 14 and over who think their situation will improve in the next 5 years by age groups. Years 2019-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

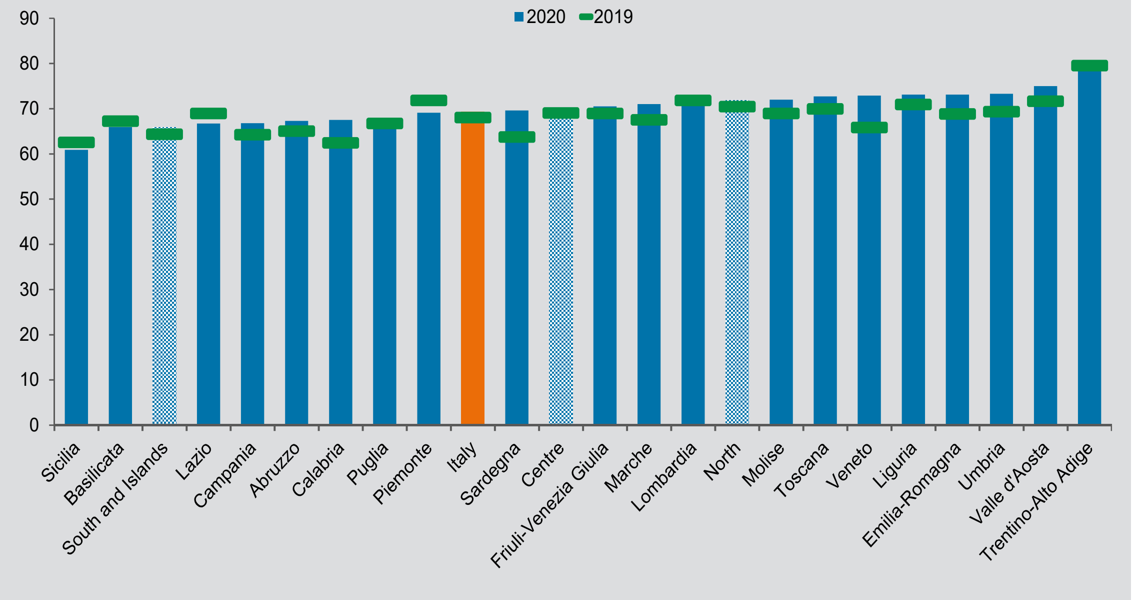
Gaps by educational qualification in life satisfaction and judgement for the future remain wide

The trend of a general increase in the share of very satisfied with life and a decrease in the share of optimists is similar between men and women and by educational attainment.
The tendency for women to have lower percentages of very satisfied and optimistic than men is confirmed. In 2020, the 43.4% of women said they were satisfied with their lives compared with the 45.7% of men; similarly, the 27.3% of women were positive about their future prospects compared with the 30.7% of men.
The gaps by educational attainment remain wide, with half of university graduates judging themselves to be very satisfied with their lives (compared with 41.7% of those with at most a secondary school leaving certificate). We also observe higher percentages of positive judgements about future prospects among those with a high educational qualification (39.7%) than among those with a low educational qualification (20.7%).

Increased satisfaction with leisure time

An important dimension of quality of life is the leisure time. The data on the percentage of individuals who say they are very or fairly satisfied with their leisure time confirms what has been examined in the previous pages regarding satisfaction with their own life.
The 69.4% of people aged 14 and over say they are satisfied with their leisure time in 2020 with respect to the 68% in 2019, continuing the upward trend observed since 2017, when the percentage was 65.6%. The positive assessment probably stems from the greater availability of leisure time brought about in many cases by the closure due to measures to combat the spread of Covid-19 contagion.

Figure 6. People aged 14 who say they are very or fairly satisfied with their leisure time, by region and geographic area. Years 2019-2020 (a)**. Percentage values**

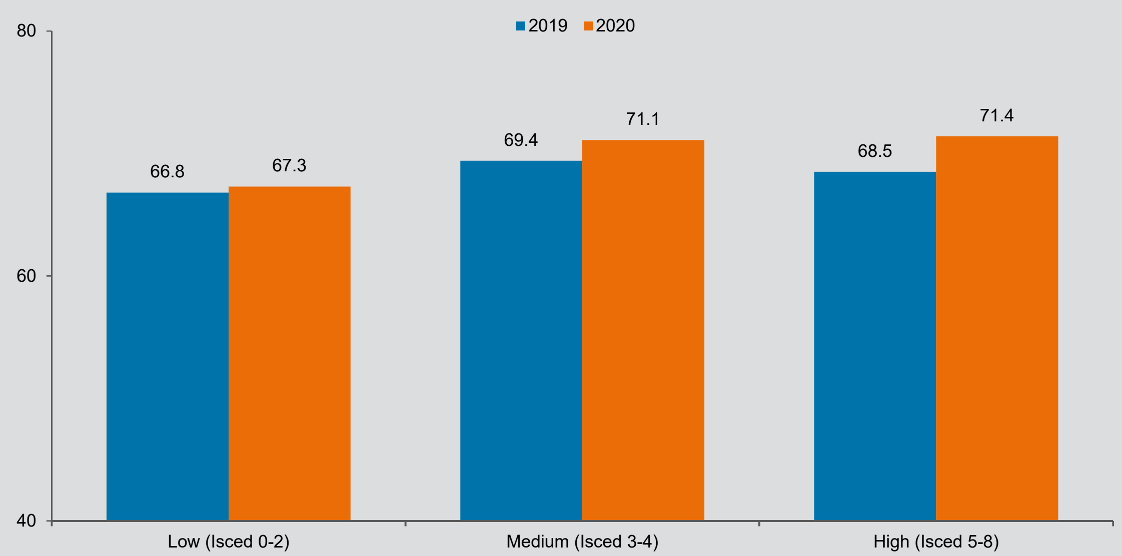


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

This indicator also shows significant territorial differences: in the North, the values are

higher (71.9%) than in the Centre (69.6%) and, above all, in the South (65.9%). However, once again, data improves compared to the previous year in all geographical areas.
Regional data show in all regions a slight improvement or stability compared to 2019, with the exception of Piedmont, where there is a significant worsening in the percentage of people satisfied with their leisure time (from 71.8% to 69.1%) (Figure 6).
Men (71.2%) are more satisfied with their leisure time than women are (67.7%), with a gap of almost 5 percentage points at national level; however, the upward trend compared to 2019 is confirmed in both cases.
Satisfaction with leisure time is the highest among 14-19 year olds (85%), while it is the lowest among 55-59 year olds (64.2%). For all age groups, the percentages are stable or slightly improved compared with the previous year. Almost two-thirds of those with a high or medium educational qualification (71%) say they are very or fairly satisfied with their leisure time, far ahead of those with a low educational qualification (67.3%). The increase compared with 2019 is more significant among the better-educated (almost 3 percentage points higher) (Figure 7).

Figure 7. People aged 14 who say they are very or fairly satisfied with their leisure time by level of education. Years 2019-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Indicators

1. **Life satisfaction:** Percentage of people aged 14 and over with a level of life satisfaction from 8 to 10 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 which 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 which 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 AND GEOGRAPHIC AREAS	Life satisfaction (a)	Leisure time satisfaction (a)
	2020 (*)	2020 (*)
Piemonte	44.3	69.1
Valle d'Aosta/Vallée d'Aoste	53.7	75.0
Liguria	46.2	73.1
Lombardia	48.9	71.4
Trentino-Alto Adige/Südtirol	62.2	78.4
Bolzano/Bozen	*62.7*	*79.3*
Trento	*61.6*	*77.4*
Veneto	48.5	72.9
Friuli-Venezia Giulia	49.5	70.5
Emilia-Romagna	48.5	73.1
Toscana	44.1	72.7
Umbria	44.7	73.3
Marche	47.0	71.0
Lazio	41.1	66.7
Abruzzo	43.7	67.3
Molise	44.4	72.0
Campania	31.7	66.8
Puglia	43.1	67.7
Basilicata	46.3	65.9
Calabria	47.6	67.5
Sicilia	40.0	60.9
Sardegna	46.3	69.6
North	48.4	71.9
Centre	43.0	69.6
South and Islands	40.0	65.9
Italy	**44.5**	**69.4**

(a) Per 100 persons aged 14 and over; (*) Provisional data.

Positive judgement future prespectives (a)	Negative judgement future prespectives (a)
2020 (*)	2020 (*)
27.0	16.1
30.7	14.0
27.1	13.9
31.8	11.6
28.5	11.2
25.6	*13.3*
31.3	*9.1*
30.1	13.0
29.2	15.5
28.8	14.4
26.9	17.5
26.5	15.0
25.5	16.0
30.0	11.1
27.9	11.8
25.5	9.3
31.5	8.9
29.1	11.8
27.7	11.4
24.0	12.5
24.2	12.4
32.6	8.8
29.8	13.3
28.2	14.0
28.2	10.9
28.9	**12.6**

9. Landscape and cultural heritage[1]

The way a society dwells its territory and takes care of its cultural heritage reflects that society's well-being. In Italy, for historical reasons, these aspects have such a special relevance, that our Constitution mentions the protection of the landscape and the historical and artistic heritage among its fundamental principles[2]. Landscape and cultural heritage are therefore to be considered, as well as common goods, as indicators of civil life quality: because, where their protection proves insufficient or ineffective, the Republic itself is failing one of its defining tasks.
The trends of the last decade draw a complex scenario, where old contradictions and new opportunities combine. Among the former, there is a public expenditure on cultural heritage among the lower in Europe (and too reliant on the unequal capabilities of local finance). Among the latter, we can name a growing attention, in agricultural policies and by the public, for the rural landscape (a sign of which can be seen in the growth of rural tourism), and some reduction in the pressures on the landscape from the economic system, namely from the construction and mining sectors. To a large extent, such reduction is a side effect of the slowdown in productive activities that followed the 2009 crisis: nevertheless, it provides an opportunity for innovative policies, more oriented to sustainability.
The presentation starts from an analysis of public spending on cultural heritage and landscape, providing a comparison of EU countries on state expenditure, and a comparison of Italian regions on municipal expenditure. Then, the dimension of cultural heritage is examined through the trends of the museum system and the updates of landscape indicators are commented by domains of reference: rural (spread of rural tourism), natural (impact of forest fires, pressure from mining activities), urban (illegal building). The chapter closes with a commentary on subjective indicators, referred to the perception of landscape degradation and the social attention for landscape in the experience of daily life.

Public spending on culture and landscape among the lowest in Europe compared to GDP

In 2018, Italy's public spending on Cultural services (which include heritage protection and promotion) amounted to € 5.1 billion[3]. Among the other major EU economies, France and Germany spent much more (14.8 and 13.5 billion, respectively), and also Spain committed more resources (5.3 billion). Despite the increase recorded in the last two years (+17.3% since 2016), Italy remains one of the European countries that spend less on cultural services, compared to its GDP: 2.9 per thousand against an EU average of 4 per thousand, a figure that ranks our Country 23rd among the 28 member States. On the other hand, Italy is the EU country that spends the most on the Protection of biodiversity and landscape: € 2.1 billion in 2018, vs. 1.9 of France and 1.7 of Germany[4]. The resources committed by Italy,

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

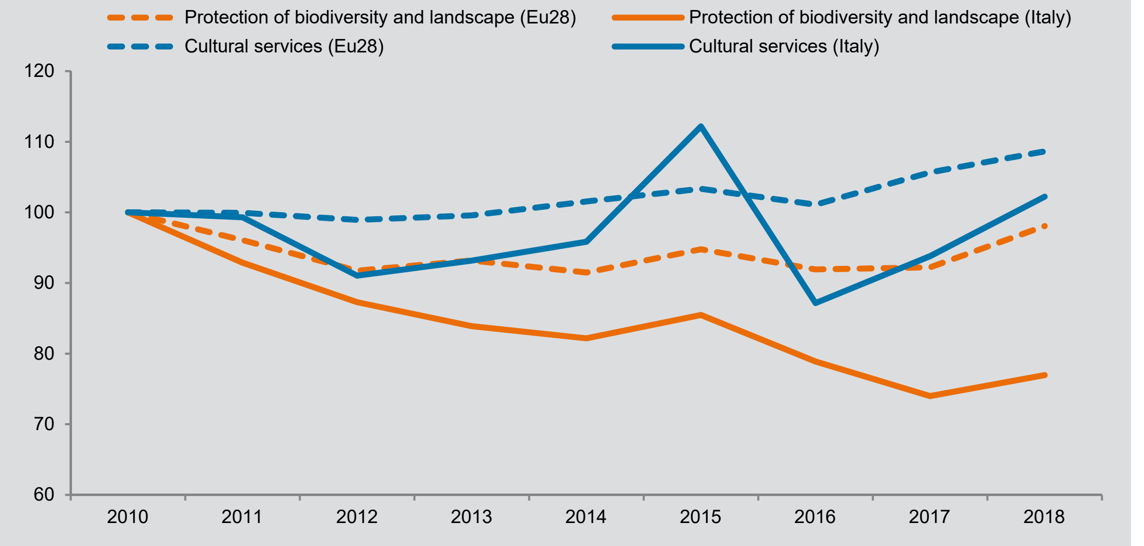
2 Constitution of the Italian Republic, art. 9. The protection is entrusted to the Republic, i.e. to the State as a whole, from the central government to the local administrations.

3 General government expenditure on class 08.2.1 of the Cofog classification.

4 General government expenditure on class 05.4.1 of the Cofog classification.

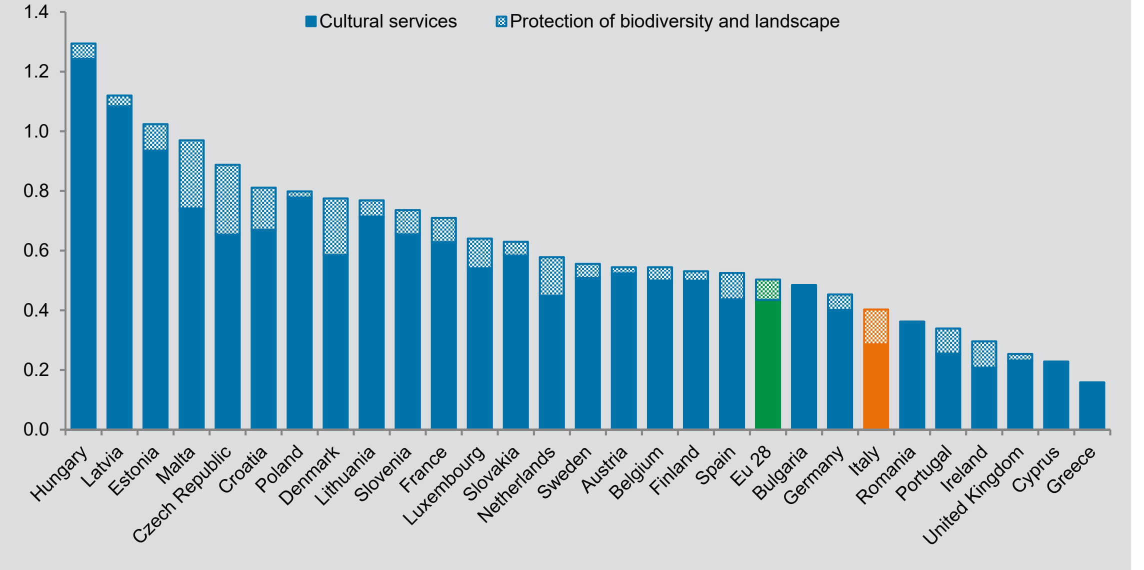
however, have been decreasing in recent years (by 23%, since 2010), and the expenditure on biodiversity and landscape is only 1.2 per thousand of the GDP (Figure 1). Therefore, even considering the sum of the two items, Italy remains well below the EU average in the ranking of public spending on landscape and cultural heritage as a proportion of the GDP (Figure 2).

Figure 1. Public expenditure on Cultural services and Protection of biodiversity and landscape in Italy and the EU. Years 2010-2018. Index, 2010=100



Eurostat, Government Finance Statistics

Figure 2. Public expenditure on Cultural services and Protection of biodiversity and landscape in the EU countries. Year 2018. Percentage of GDP



Eurostat, Government Finance Statistics

Municipal spending on culture grows, but the North-South divide keeps widening

The current expenditure of Municipalities for cultural heritage and activities is equal, in 2018, to € 19.4 per capita: 0.6 more than the previous year, but 2.9 less than 2010[5]. In absolute value, this expenditure item has fallen by more than 10% since 2010, while the overall current expenditure grew by 8.5%. In the Municipalities' balance sheets, the budget for culture fell from 3.4% to 2.8% of current spending between 2010 and 2013 and remained stable since then (Figure 3a). Moreover, the gap between the Centre-North regions and the Southern ones keeps widening. In 2018, the average spending is € 8.9 per capita in South and Islands (45.9% of the Italian average, and just over a third of the Centre-North average), while in 2010 it was € 11.6 per capita (52% of the Italian average and about 40% of Centre-North average, Figure 3b). We observe even greater inequalities in the regional comparison, as per capita value range from € 4.5 of Campania to nearly 60 of the province of Bolzano (Figure 4).

Figure 3a. Current expenditure of Municipalities on Protection and promotion of cultural heritage and cultural and landscape activities (a). **Years 2010-2018. Euros per capita and percentage values**

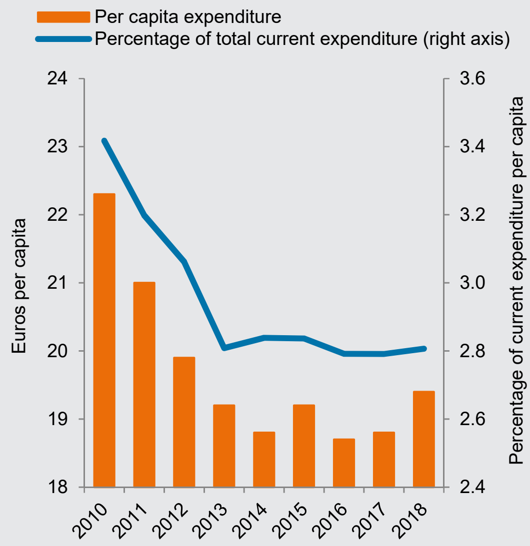
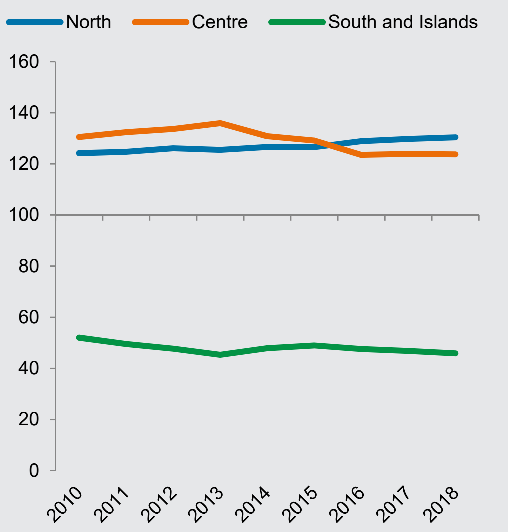


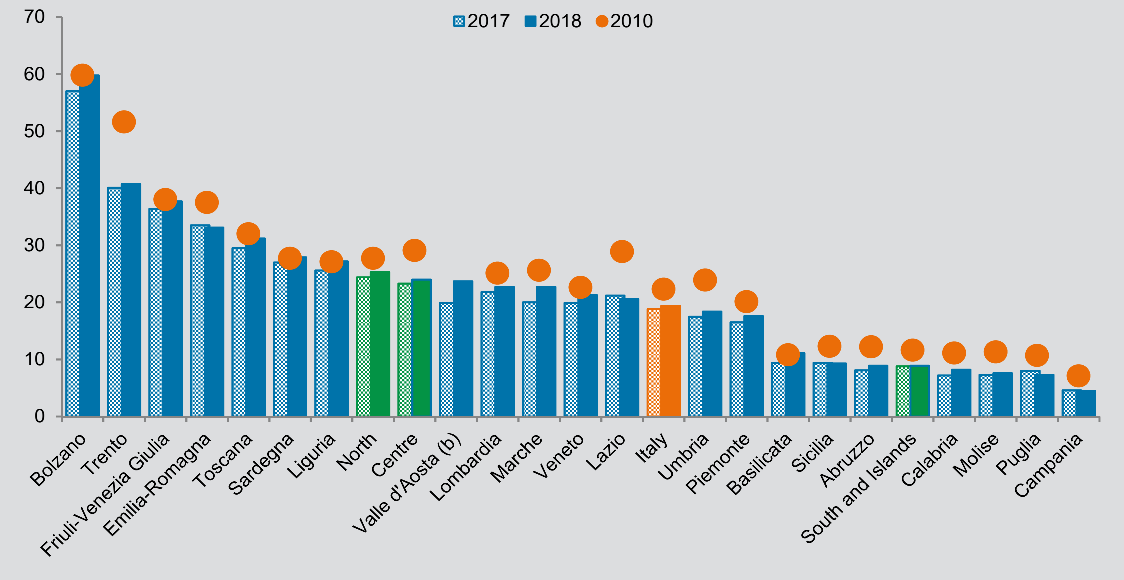
Figure 3b. Current expenditure per capita of Municipalities on Protection and promotion of cultural heritage and cultural and landscape activities (a) **by geographic area. Years 2010-2018. Index, Italy=100**



Source: Istat, *Final Balance Sheets of Local Administrations*
(a) Payments made by Municipal administrations (until 2015, expenditure on *Functions related to culture and cultural heritage*).

5 Current expenditure (payments) for "Protection and promotion of cultural heritage and cultural and landscape activities".

Figure 4. Current expenditure per capita of Municipalities on Protection and promotion of cultural heritage and cultural and landscape activities (a) by region and geographic area. Years 2010 and 2017-2018. Euros per capita



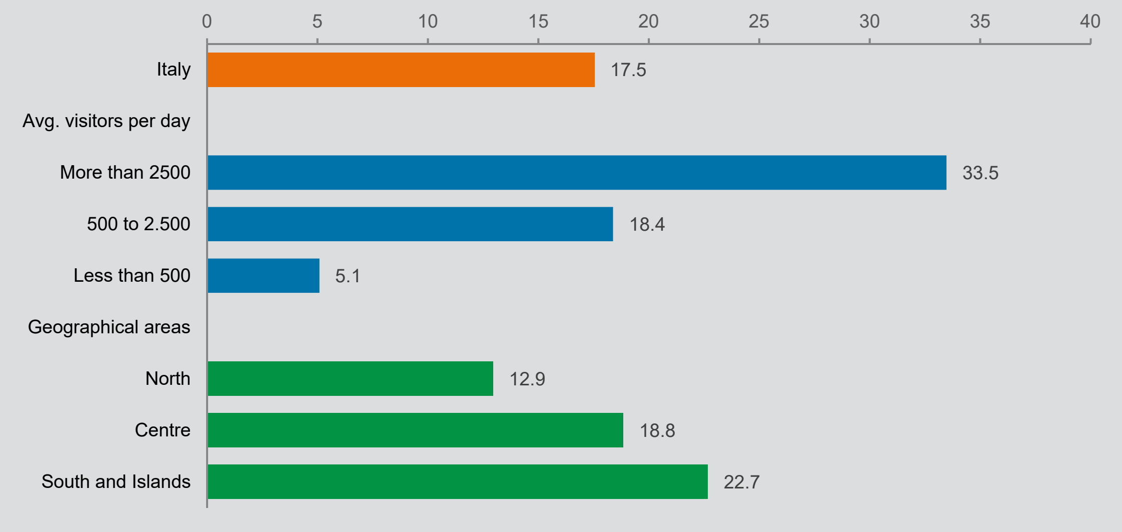
Source: Istat, *Final Balance Sheets of Local Administrations*
(a) Payments made by Municipal administrations (until 2015, expenditure on *Functions related to culture and cultural heritage*).
(b) Data 2010 not available.

Visitors to museums increase, especially in South and Islands, but the concentration of flows as well

According to the last update before the COVID-19 pandemic, there are 4,880 permanent exhibition facilities open to the public all over Italy[6] (1.6 every 100 km^2), which welcomed almost 130 million visitors during 2019. Since 2015, the number of facilities has decreased by 1.9%, while we observe a continuous increase in the visitors' flow (by 17.5%, and by 22.7% in South and Islands, Figure 5), although in 2019 the growth slowed down compared to the previous year (+1% vs. +8%). Half of the visitor flow, however, concentrates in 1% of the facilities, and attendance increases especially in the most important structures (by 33.5% in those with an average of over 2,500 visitors per day). Accordingly, the indicator of density and relevance of the museums' heritage shows a highly concentrated territorial distribution (Figure 6). Only four regions, home to renowned destinations for international tourism, exceed the Italian average (1.62 facilities per 100 km^2): Lazio, Toscana, Campania, and Veneto. While the visitors' increase is a positive fact in itself (and particularly encouraging for the Southern regions), the tendency to the concentration of flows is less so, as it may become unsustainable for the major attractors of cultural tourism, and calls for a rebalancing strategy.

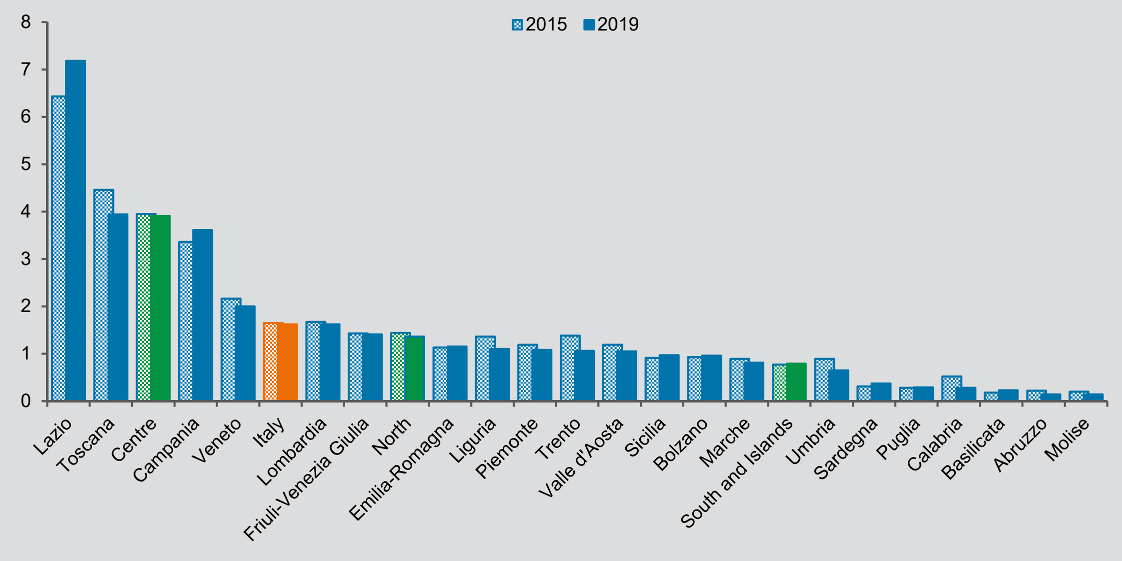
6 Museums and galleries, archaeological sites and parks, monuments, and monumental complexes (run either by public and private institutions).

Figure 5. Visitors of museum facilities (a) by average number of daily visitors and by geographic area. Years 2015-2019. Percentage changes



Source: Istat, Survey on museums, monuments and similar institutions
(a) Museums and galleries, Archaeological sites and parks, Monuments and monumental complexes.

Figure 6. Density and importance of museum heritage (a) by region and geographic area. Years 2015 and 2019. Museum facilities weighed by the number of visitors per 100 km²



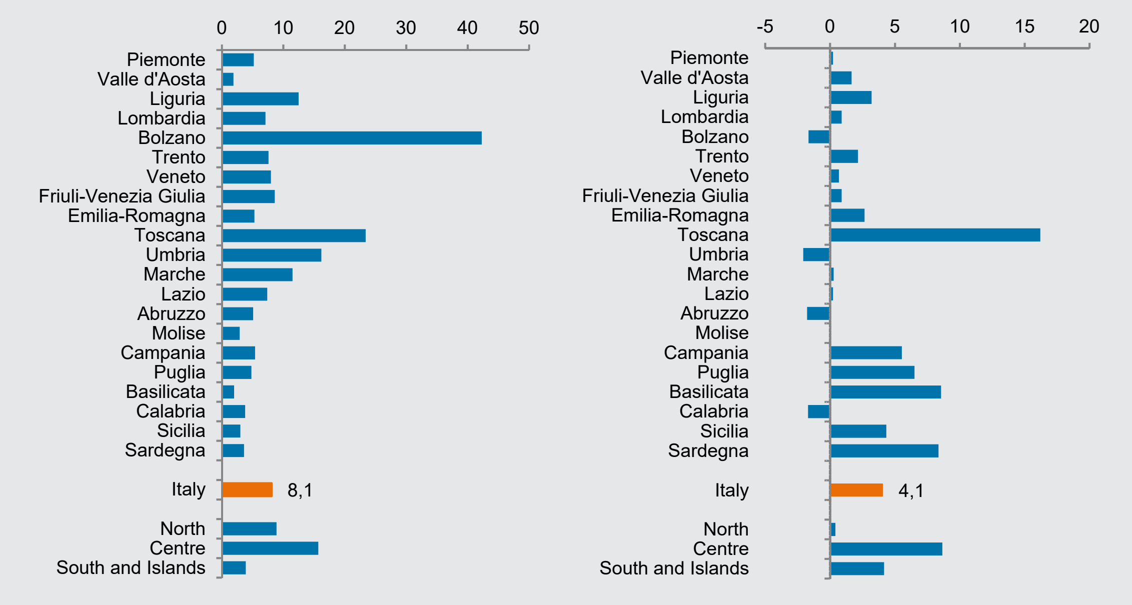
Source: Istat, Survey on museums, monuments and similar institutions

Signs of stabilisation for rural tourism, but growth continues in South and Islands

Thanks to a national regulation oriented to multi-functionality and the diversification of farm income, rural tourism has proved to be – over time – a valid means for tackling the abandonment of rural areas, and is undoubtedly the most widespread practice for the promotion of rural landscape in Italy[7]. In 2019, there are 8.1 rural tourism facilities every 100 km^2 (in over 60% of Italian municipalities). More than thirty years after the first Law on rural tourism, the development of this phenomenon tends to stabilise. Despite the highest growth rate recorded in the last five years (+4.1%), the number of farms practising rural tourism is stable or decreasing in most of the Central and Northern regions (with the notable exception of Toscana), while it keeps growing fast in Southern Italy (where the sector is less mature and likely to have more margins for expansion). Rural tourism is practised mostly in Central Italy (15.7 farms per 100 km^2, almost double the Italian average and more than four times that of South and Islands), but the highest concentration is in the northern province of Bolzano (42.3 farms per 100 km^2) (Figure 7).

Figure 7a. Spread of rural torism facilities by region and geographic area. Year 2019. Average number of farmhouses per 100 km^2

Figure 7b. Rural tourism facilities by region and geographic area. Years 2018-2019. Percentage changes



Source: Istat, Survey on rural tourism accommodations

7 The Italian law on rural tourism (no. 96/2006) only allows this activity to be carried out by actual farms, and only "in connection with the cultivation of crops, forestry and animal husbandry". It is to the Regions to define criteria for assessing this connection, provided that agricultural activities remain the prevalent ones.

New entries in the National Register of Historic Rural Landscapes

The National Register of Historic Rural Landscapes and Traditional Farming Practices is run by the National Observatory of Rural Landscape, intending to promote the knowledge and protection of the landscape within the framework of rural development planning[8]. By the end of 2020, the entries were 25: 22 historic landscapes (of which six in the North, ten in the Centre, and six in South and Islands) and three traditional agricultural practices.

Pressure from mining and quarrying activities decreasing over the last five years

In Italy, the extraction intensity of non-energy minerals is among the highest within the EU[9]. The pressure on the landscape from quarrying and mining activities is increased by the structure of the production system, made of a large number of extraction sites (mainly open pit), widespread across the territory. In 2018, the authorised sites were just over 4,500 (about one every 67 km^2), of which over 80% active[10]. The pressure indicator marks a slight decrease, standing at 259 m^3 per km^2 (0.9% less than the previous year), in continuity with the trend of the last five years (-16.1% since 2013, Figure 8a)[11]. The pressure is on average higher (and slightly increasing) in the North and the Centre (321 and 294 m^3 per km^2, respectively), while it is quite lower in South and Islands (183). At the regional level, the highest value is found in Lombardia (541 m^3 per km^2), followed by Umbria and Molise (473 and 419). Compared to 2013, however, Lombardia is one of the regions where the pressure of extraction activities has decreased the most (along with Valle d'Aosta, Sicilia, Lazio, and Puglia), while the most significant increases are observed in Friuli-Venezia Giulia and Abruzzo (Figure 8b).

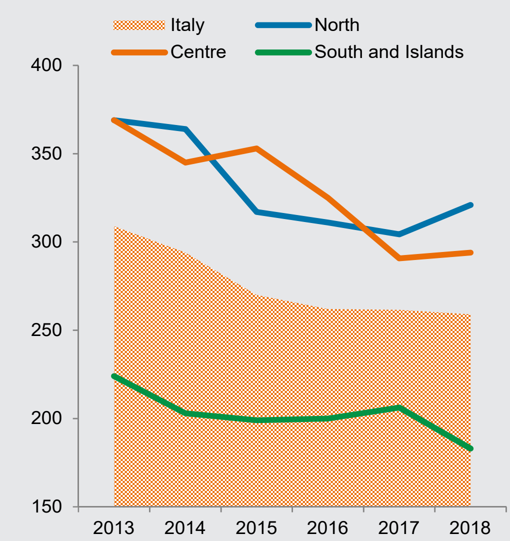
8 The Observatory was established in 2012 by the Ministry of Agricultural Policies. New entries are made after an assessment of applications proposed by local stakeholders and can be withdrawn if the sites lose their original characters. Currently, the historic rural landscapes registered are located across 11 regions: Lombardia, Trentino-Alto Adige, Veneto, Toscana, Umbria, Lazio, Molise, Campania, Puglia, Sicilia, and Sardegna.

9 In 2019, the extraction intensity of non-energy minerals in Italy is 719 tonnes per km^2 (2019), surpassed in the EU only by Germany, Poland, and Romania (Source: Eurostat, *Environmental Statistics: Material Flow Accounts*).

10 Source: Istat, *Anthropogenic pressure and natural hazards*. Extraction sites are considered active if having authorisation or concession into force; inactive if the authorisation expired or was suspended in the reference year. The sites that are actually in production are a subset of the active ones (2,169 out of 3,674 in 2018).

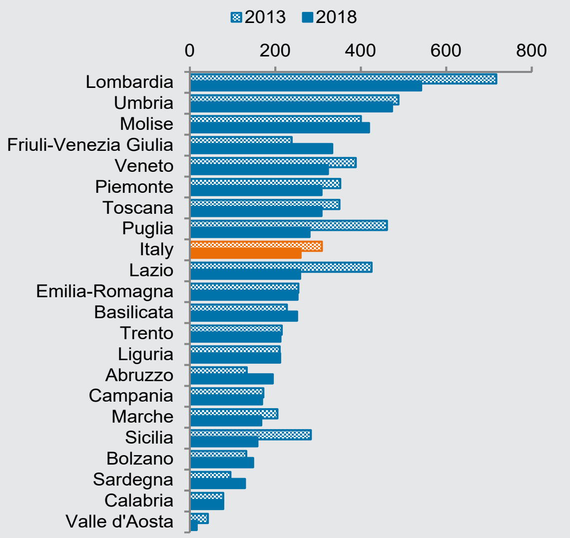
11 Like the indicator used for the international comparison (based on material flows accounts), the Bes indicator is a measure of extraction intensity but is expressed in units of volume rather than mass. Besides, the Bes indicator is based on a different source (the Istat Survey on withdrawal of non-renewable natural resources).

Figure 8a. Pressure from mining and quarrying activities by geographic area. Years 2013-2018. m³ of mineral resources extracted per km²



Source: Istat, Anthropogenic pressure and Natural Hazards

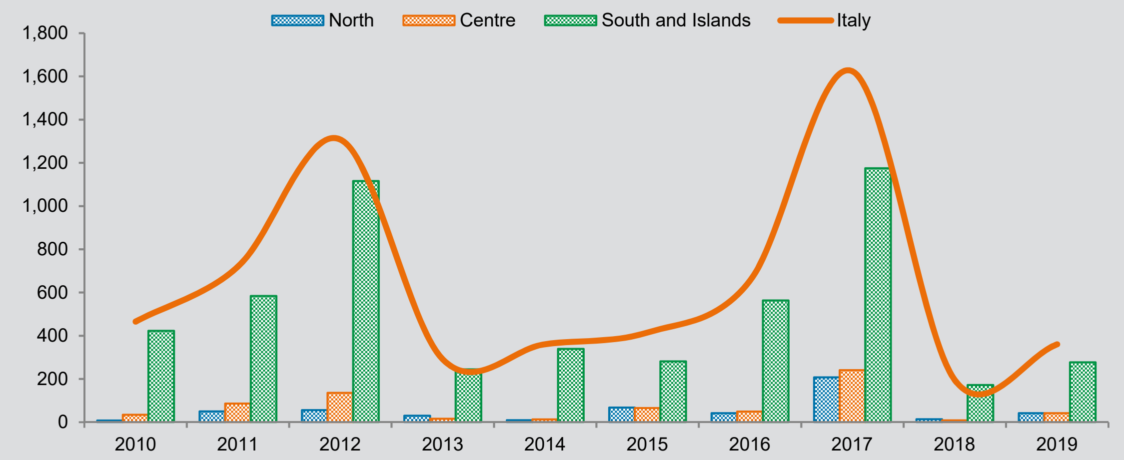
Figure 8b. Pressure from mining and quarrying activities by region. Years 2013 and 2018. m³ of mineral resources extracted per km²



Limited impact of forest fires for the second year in a row

In the last decade, the phenomenon of forest fires followed a cyclical pattern in Italy, as it is naturally affected by the variability of weather and climate conditions (Figure 9). However, the containment of forest fires also depends on the correct management of agricultural and forest areas, especially in the regions most exposed to risk. In 2019, forest fires affected about 36 thousand hectares of land, equal to 1.2 per thousand of the national territory. Although the burnt area almost doubled compared to the previous year, the figure of 2019 is among the lowest of the last decade – marked by the peaks of 2012 and 2017 (4.3 and 5.4 per thousand). The impact concentrates in South and Islands, where the proportion of burnt areas reaches 2.2 per thousand, with a maximum of 4.2 per thousand in Sicilia.

Figure 9. Area covered by forest fires by geographic area. Years 2010-2019. Absolute values (km²)

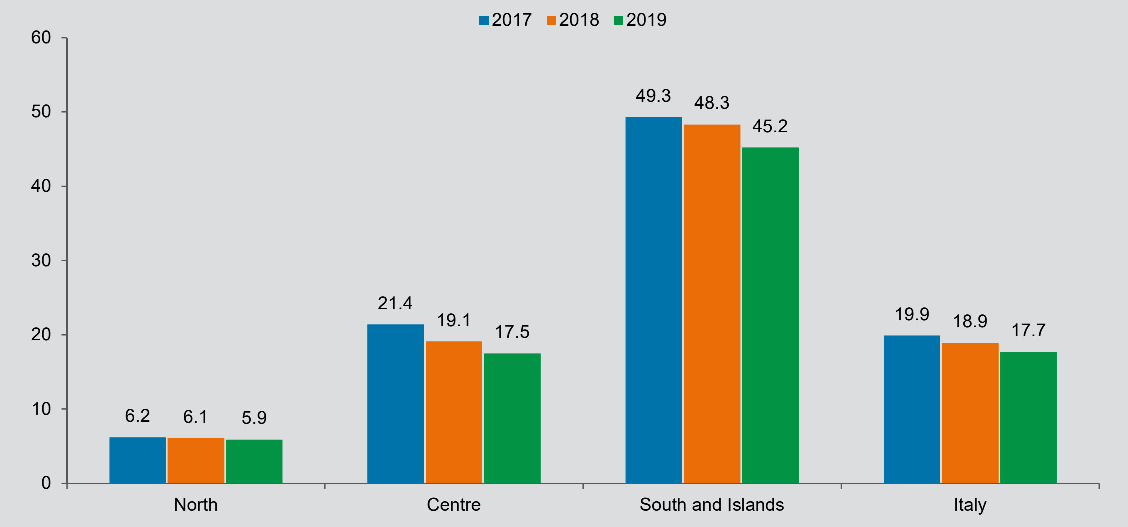


Source: Istat, based on data provided by State Forestry Corps and Civil Protection (2005-2015), Carabinieri Corps (2016-2019)

Illegal building rate dropping down, but still at worrying levels in Central and Southern Italy

In 2019, the illegal building rate decreases for the second year in a row. According to estimates, the ratio is 17.7 unauthorised housing constructions every 100 authorised, compared to 19.9 in 2017 (Figure 10). Despite the positive trend, the proportion is still high, witnessing the persistence of serious shortcomings in the governance of urban development – even if the overall flow of housing production (of which illegal building is, fortunately, a minor component) continues to be much lower than it was before the economic crisis of 2009[12]. The phenomenon of illegal building is slowing down but is far from extinguishing, and every year continues to take a significant share of the building production away from the rule of law – with all that this entails in terms of landscape degradation, exposure to hydrogeological risk and black-market labour in the construction sector. The situation is most severe in South and Islands, where the ratio of unauthorised buildings rises to 45.2 every 100 authorised, but it is also worrying in Central Italy, where the figure is close to the Italian average.

Figure 10. Illegal building rate by geographic area. Years 2017-2019. New unauthorised housing units every 100 authorised (a)



Source: Istat, based on Cresme data
(a) Data 2019 provisional.

12 In 2019, the municipalities authorised just over 55,000 new dwellings (+28.4% compared to 2015, but -71.3% compared to 2008). The recovery that began after 2015 was then interrupted by the COVID-19 pandemic: in the first half of 2020, the trend change for new dwellings was -13.6%, after +2.9% in the second half of 2019 (Source: Istat, *Survey of building permits*). For the trends over the last ten years, see the introductory chapter.

Perception of degradation decreases in 2020 but concern for the landscape remains stable

The proportion of people that are not satisfied with the quality of landscape of the place where they live (associated with the perception of degradation) shows a clear improvement in 2020, recording the lowest value since 2014 (19.2%, almost 2 points less than the previous year). The territorial differences follow the usual pattern: those who believe to live in places "affected by evident degradation" are fewer in the North (14.4%, almost unchanged from the previous year), close to the Italian average in the Centre (19.3%, down 2.6 points) and more numerous in South and Islands (25.8%). South and Islands record the most significant progress from the previous year (-4.5 points), but the indicator remains substantially stable in the medium term (Figure 11a). The regional variability is very wide, with a distance of 27 percentage points between the two extremes (5.2% of the province of Trento vs. 32.2% of Campania). Besides Campania, the highest percentages are found in Calabria, Sicilia, and Lazio – all above the average for South and Islands (Figure 11b). Differences associated with age or educational attainment are much smaller: the percentages are slightly lower among women (18.8%), the people with lower education (18.7%), and the elderly (17.8% for the age of 55 and over).

Figure 11a. Dissatisfaction for the landscape of the place of living, by geographic area. Years 2014-2020 (a). Per 100 people of 14 years and over

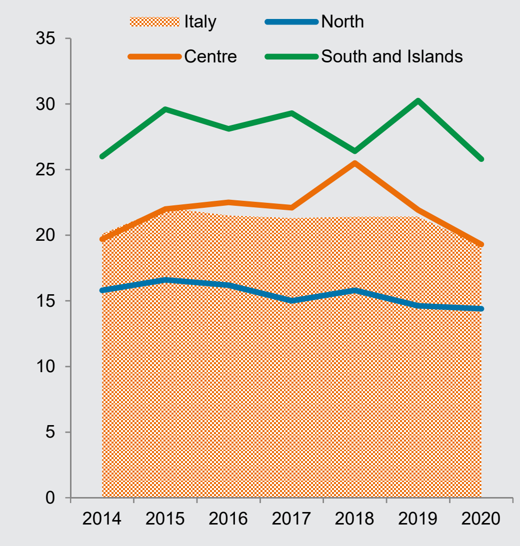
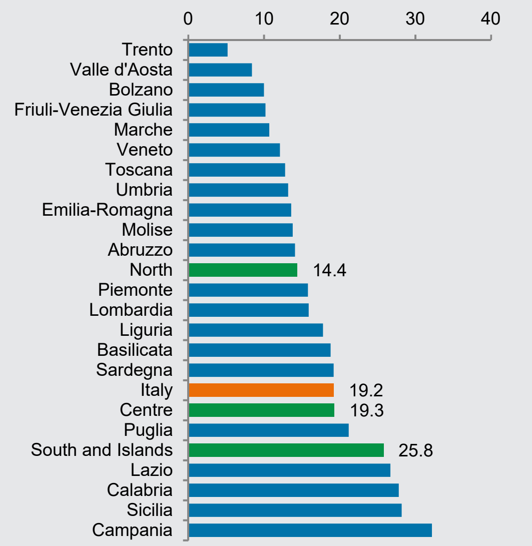


Figure 11b. Dissatisfaction for the landscape of the place of living, by region and geographic area. Year 2020 (a). Per 100 people of 14 years and over



Source: Istat, Survey on Aspects of Daily Life
(a) Data 2020 provisional.

Finally, in 2020, we observe a stabilisation in the indicator of concern for landscape deterioration, standing at 12.5% after being steadily declining since 2013. This measure is associated with the social consideration for the value of landscape and the attention to its protection. In contrast to the dissatisfaction indicator, values are on average higher in the North (13.8%) and lower in South and Islands (11.1%), even showing a lesser and less polarized territorial variability (Figure 12b). The proportion of people expressing concern about the landscape does not vary significantly in any of the three geographic areas, among which the differences in level have considerably narrowed in recent years (Figure 12a).

Concern about the landscape is more prevalent among people with higher education, but also this gap has been gradually narrowing, while no significant differences are observed in relation to gender and age.

Figure 12a. Concern for the deterioration of landscape, by geographic area. Years 2013-2020 (a). Per 100 people of 14 years and over

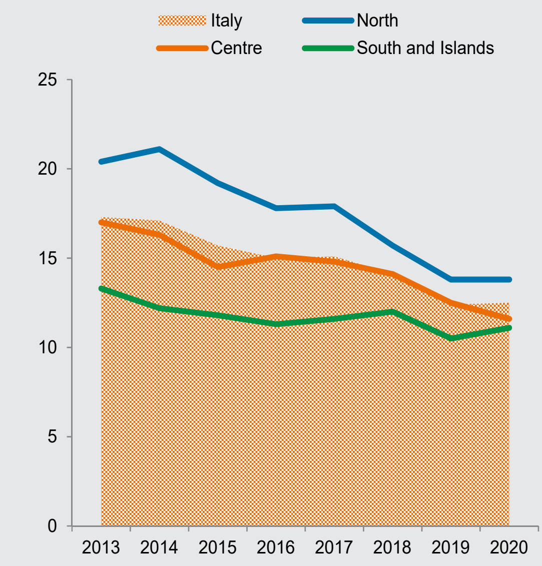
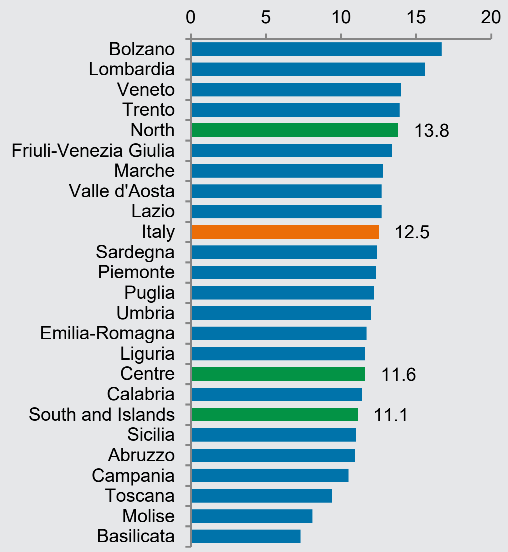


Figure 12b. Concern for the deterioration of landscape, by region and geographic area. Year 2020 (a). Per 100 people of 14 years and over



Source: Istat, Survey on Aspects of Daily Life
(a) Data 2020 provisional

Indicators

1. **Current expenditure of Municipalities for culture:** Current expenditure on protection and promotion of cultural properties and activities, in euro per capita.
   Source: Istat, Processing of data from Final balance sheets of municipal governments.
2. **Density and importance of musems' heritage:** Number of permanent exhibition facilities per 100 sq.km (museums, archaeological sites and monuments open to public), weighted by the number of visitors. The weight for each facility is set at (Vi / V x M), where Vi is the number of visitors, M the total number of facilities and V the total of visitors.
   Source: Istat, Survey on museums and other similar institutions.
3. **Illegal building rate:** Ratio of the number of unauthorised buildings to the number of building permits issued by the Municipalities.
   Source: Center for economic, social 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 on data from General census on agriculture, General census on popoluation and housing, Census mapping.
5. **Erosion of farmland from abandonment:** Percentage ratio of rural areas affected by abandonment to the total of rural areas ("Rural areas affected by abandonment": rural areas with decreasing population and decreasing agricultural land).
   Source: Istat, Processing of data from General census on agriculture, General census on popoluation and housing, Census mapping.
6. **Pressures of mining and quarrying activities:** Volume of non-energy mineral resources extracted, in cubic metres per km^2.
   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 the State forestry corps.
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 built-up area of the provincial capital municipalities.
   Source: Istat, Processing on data from Survey on urban environment 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 regional 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 AND GEOGRAPHIC AREAS	Current expenditure of Municipalities for culture (a)	Density and importance of museums' heritage (b)	Illegal building rate (c)	Erosion of farmland from urban sprawl (d)	Erosion of farmland from abandonment (d)	Pressures of mining and quarrying activities (e)
	2018	2019	2019	2011	2011	2018
Piemonte	17.6	1.08	5.2	18.5	41.4	308
Valle d'Aosta/Vallée d'Aoste	23.7	1.05	5.2	0.0	66.5	16
Liguria	27.2	1.10	9.6	31.8	57.4	211
Lombardia	22.7	1.62	5.9	24.0	31.0	541
Trentino-Alto Adige/Südtirol	50.2	1.01	3.6	0.0	28.4	177
Bolzano/Bozen	*59.8*	*0.96*	*....*	*0.0*	*31.3*	*148*
Trento	*40.7*	*1.06*	*....*	*0.0*	*24.9*	*212*
Veneto	21.3	2.00	6.8	56.9	23.1	323
Friuli-Venezia Giulia	37.7	1.41	3.6	7.0	54.2	333
Emilia-Romagna	33.1	1.15	5.8	27.0	42.6	252
Toscana	31.2	3.94	10.1	14.2	47.7	308
Umbria	18.4	0.65	16.1	8.3	50.0	473
Marche	22.7	0.81	16.1	14.7	38.8	167
Lazio	20.6	7.18	22.2	53.6	15.4	258
Abruzzo	8.9	0.14	31.2	16.3	43.1	194
Molise	7.6	0.14	31.2	6.9	74.4	419
Campania	4.5	3.61	57.4	29.6	34.2	169
Puglia	7.3	0.29	39.9	33.1	17.1	280
Basilicata	11.1	0.23	61.0	14.5	38.2	251
Calabria	8.2	0.28	61.0	22.0	54.3	78
Sicilia	9.3	0.97	58.2	16.9	29.5	158
Sardegna	27.9	0.37	27.2	6.5	27.1	129
North	25.3	1.36	5.9	24.3	37.5	321
Centre	24.0	3.91	17.5	25.1	37.0	294
South and Islands	8.9	0.79	45.2	18.8	34.2	183
Italy	**19.4**	**1.62**	**17.7**	**22.2**	**36.1**	**259**

(a) Euro per capita.
(b) Number of museums and similar structures per 100 sq.km, weighed by the number of visitors.
(c) Illegal buildings per 100 authorized buildings. Values of 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 regional territory.
(e) Cubic metres extracted per sq.km of regional territory. Data is provisional for Lazio, Calabria and Sicilia.
(f) Area covered by fires, values per 1,000 sq.km.
(g) Number of farms per 100 sq.km.
(h) Sq.m per 100 sq.m of built-up area.
(i) Per 100 persons aged 14 and over. Provisional data.

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)
2019	2019	2018	2020	2020
0.8	5.2	3.8	15.8	12.3
..	1.9	0.9	8.4	12.7
1.3	12.5	0.9	17.8	11.6
0.5	7.1	2.7	15.9	15.6
..	26.5	0.9	7.5	15.3
..	*42.3*	*0.1*	*10.0*	*16.7*
..	*7.6*	*1.2*	*5.2*	*13.9*
..	8.0	3.0	12.1	14.0
0.1	8.6	5.4	10.2	13.4
..	5.3	0.7	13.6	11.7
0.8	23.4	1.8	12.8	9.4
0.2	16.2	2.5	13.2	12.0
0.1	11.5	1.4	10.7	12.8
1.2	7.4	1.4	26.7	12.7
0.4	5.1	0.7	14.1	10.9
0.4	2.9	0.1	13.8	8.1
2.2	5.4	1.8	32.2	10.5
1.4	4.8	0.6	21.2	12.2
1.6	2.0	4.2	18.8	7.3
3.5	3.8	0.5	27.8	11.4
4.2	3.0	1.3	28.2	11.0
1.5	3.6	0.3	19.2	12.4
0.3	8.9	2.4	14.4	13.8
0.7	15.7	1.6	19.3	11.6
2.2	3.9	1.1	25.8	11.1
1.2	**8.1**	**1.8**	**19.2**	**12.5**

10. Environment[1]

The preservation of the natural environment, the struggle against pollution, and the adaptation to climate change have a primary role for a population's well-being and health. The strong and acknowledged link between these conditions is therefore a reason for common political initiatives at European and international level (Ostrawa declaration, 2017)[2].
In recent years, from the perspective of sustainable socio-economic development, environmental issues have become increasingly central to the analysis of the determinants of the well-being of people and communities, both in terms of perception of the quality of the environment in which we live, and in terms of availability of natural resources and accessibility to the environmental contexts.
Despite the significant progress made in the last decade, efforts did not produce adequate solutions, and the environmental picture still shows critical aspects, with a variety of situations in different areas of the Country, not always connected to the traditional North-South divide.
The European Green Deal, focused on sustainable development (Agenda 2030) is the European Union's response to the many challenges set, among others, by environmental degradation and climate change. The Green Deal includes an action plan and a series of substantial investments, aimed at reducing pollution, promoting the efficient use of resources to enable the transition to a green and circular, equitable and inclusive economy, restoring biodiversity. The analysis of the Bes Environment domain is based on six dimensions, which describe how the environment contributes to collective well-being. Air quality, water quality and water resources, biodiversity and the naturality of marine and terrestrial ecosystems, and soil quality are all factors or dimensions that ensure a higher level of social well-being. In addition, there is the cross-sectional dimension of the subjective assessment of the environmental situation. Finally, "materials, energy and climate change" collects indicators that measure the domestic material consumption, extreme weather and climate conditions, emissions of climate-altering gases, and the consumption of energy from renewable resources.These dimensions are broken down into a total of 21 indicators, some of which updated to 2020.

Growing concern about climate change and the greenhouse effect

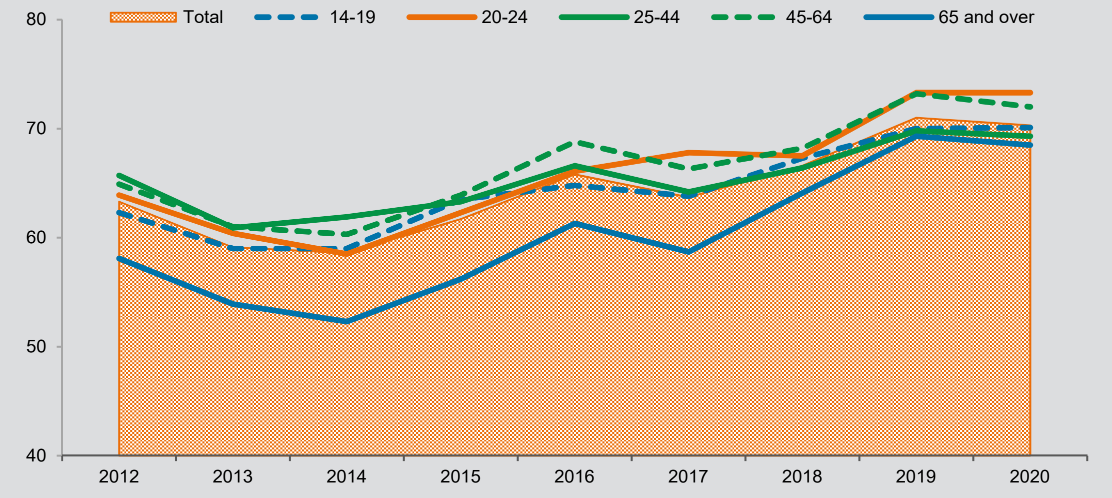
The effects of climate change and the increase of the greenhouse effect represent one of the environmental issues that people are most concerned about, which is widespread and shared throughout the Country.
The Istat Aspects of Daily Life survey testifies how, starting from 2015, the share of citizens expressing this concern is growing steadily. In 2014 they were 58.7%, but in the last two years they exceeded 70%.

1 This chapter was edited by Stefano Tersigni, with contributions from: Domenico Adamo, Tiziana Baldoni, Raffaella Chiocchini, Luigi Costanzo, Elisabetta Del Bufalo, Aldo Femia, Flora Fullone, Antonino Laganà, Maria Rosaria Prisco, Simona Ramberti, Silvia Zannoni.

2 WHO, Unece, Unep - Declaration of sixth ministerial conference on environment and health, Ostrawa (Czech Republic) 13-15 June 2017.

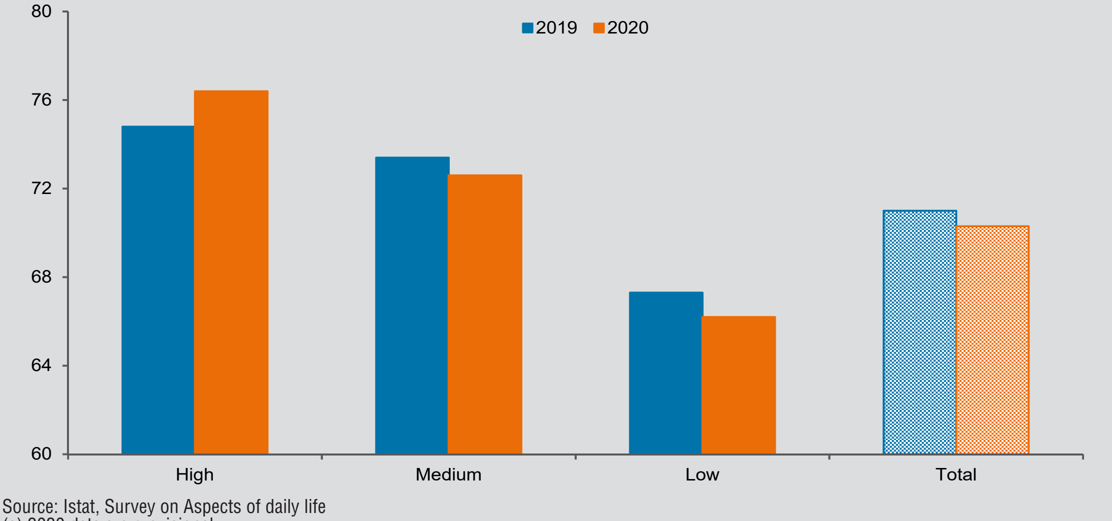
In the northern and central regions, since 2015, the percentage of people expressing concern is slightly higher than in the South. In 2020, in the North, it was 72.2%, in the South 67.5%. The exception is Molise, which is the southern region recording the highest percentage of people concerned about the greenhouse effect and climate change (77.4%).
While in past years people aged 65 and over expressed slightly less concern about these environmental issues than all other age groups, in the past two years (2019-2020) awareness of this topic is high among citizens of all ages, including young people (Figure 1).
Substantial differences, however, are associated with the education attainment. Indeed, among people with a medium-high qualification, the share of those who express concern about the greenhouse effect and climate change is higher (Figure 2).

Figure 1. Concern about climate change and/or increasing greenhouse effect by age group. Years 2012-2020 (a). **Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Figure 2. Concern about climate change and/or increasing greenhouse effect by education attainment. Years 2012-2020 (a) (b). **Per 100 persons aged 14 and over**

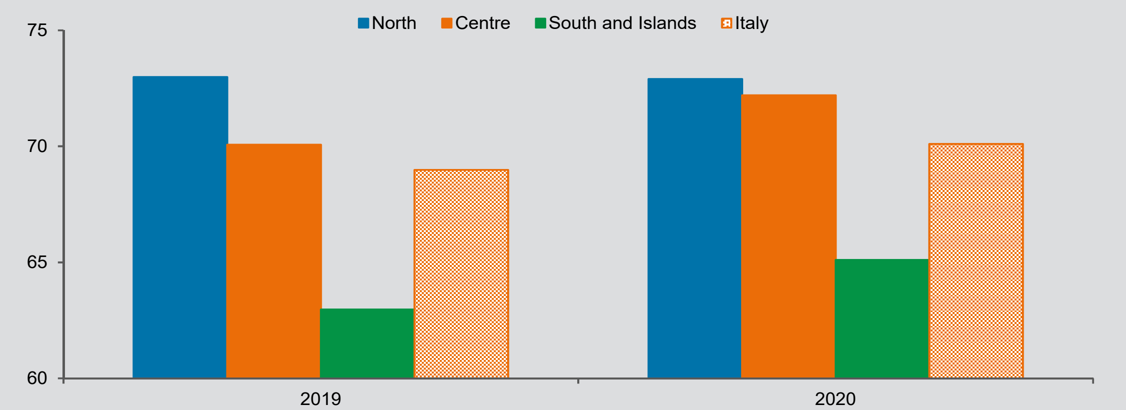


Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.
(b) Low level of education: Isced 0-2; Medium level of education: Isced 3-4; High level of education: Isced 5-8.

Seven out of ten people satisfied with the state of the environment in the place of living

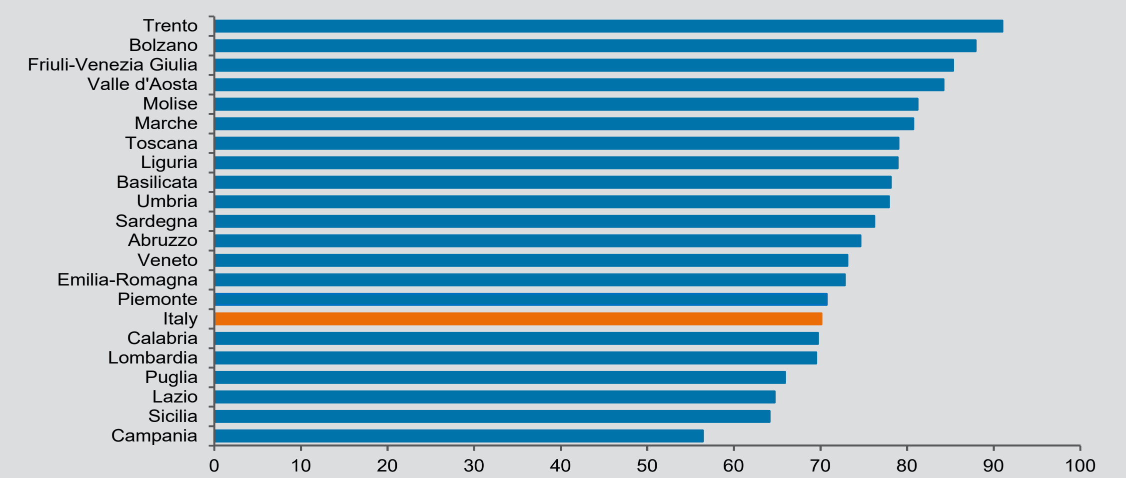
In 2020, people aged 14 and over who report being very or quite satisfied with the environmental situation in the area where they live are 70.1%, slightly up (+1.1 points) from 2019. Over the past five years, the national figure remained quite stable. Variability depends most on the area of residence: in the North and in the Center more than 72% of those interviewed declared to be satisfied, while in the South the percentage dropped to 65% (Figure 3). In Trentino-Alto Adige, Friuli-Venezia Giulia and Valle d'Aosta, values of over 84% were recorded. In Molise, the figure is 81.2%, the highest percentage in southern Italy. Residents in Campania and Sicilia are the least satisfied with the state of the environment, 56.4% and 61.1% respectively (Figure 4). Significant differences, though not very marked, related to age and education were observed: satisfaction was more common among younger people (14-19 years) and the elderly (65 and over) and among those with lower education attainment, while no difference is observed between women and men.

Figure 3. Satisfaction for the environmental situation (air, water, noise) of the area where people live by geographic area. Years 2019-2020 (a). **Per 100 persons aged 14 and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Figure 4. Satisfaction for the environmental situation (air, water, noise) of the area where people live by region. Years 2019-2020 (a). **Per 100 persons aged 14 and over**



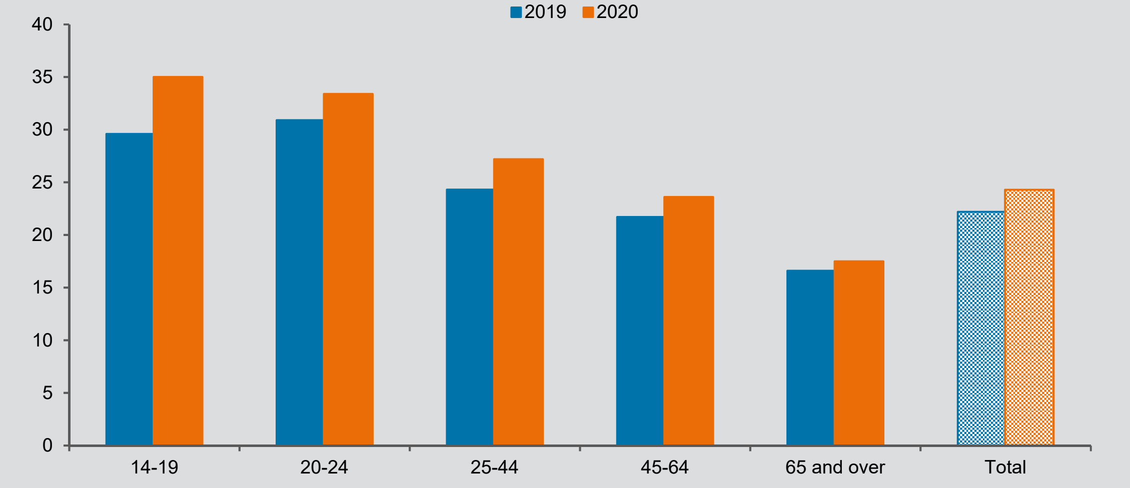
Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

Growing concern among young people about loss of biodiversity

The concern about biodiversity loss, i.e., the extinction of animal and vegetal species is increasing. In 2020, it is reported by 24.3% of the population aged 14 and over (it was 22.2% in 2019). This increase is observed all over Italy, although the highest percentages are found in the northern and central regions.

Among the younger and those with higher education, a greater sensitivity to the protection of the natural environment emerges, especially in the last two years. Concern about biodiversity loss appears to be most common among young people (14-19 and 20-24 age groups), who overtook the corresponding share of people aged 65 and over by about 13 percentage points in 2019 and by 16 points in 2020 (Figure 5). Respondents with medium-high educational qualifications have always been more aware of these problems, with differences of about 6 percentage points compared to those with low qualifications. There are no significant gender gaps in the perception and assessment of this issue.

Figure 5. Concern for biodiversity loss by age group. Years 2019-2020 (a)**. Per 100 persons aged 14 years and over**



Source: Istat, Survey on Aspects of daily life
(a) 2020 data are provisional.

The coverage of protected areas remains unchanged

The areas belonging to the “Natura 2000 Network” and/or to the Official List of Protected Areas (EUAP) are the main protected, marine and terrestrial areas of the Country and represent the primary instrument for the conservation of biodiversity.

The set of terrestrial protected areas covers 21.6% of the national territory, a value that is stable since 2012[3]. The higer regional percentages of protected areas are in southern Italy: in particular in Abruzzo (36.6%) and Campania (35.3%). Marine protected areas cover about 11 thousand square kilometers of sea surface, equal to 7.2% of national territorial waters.

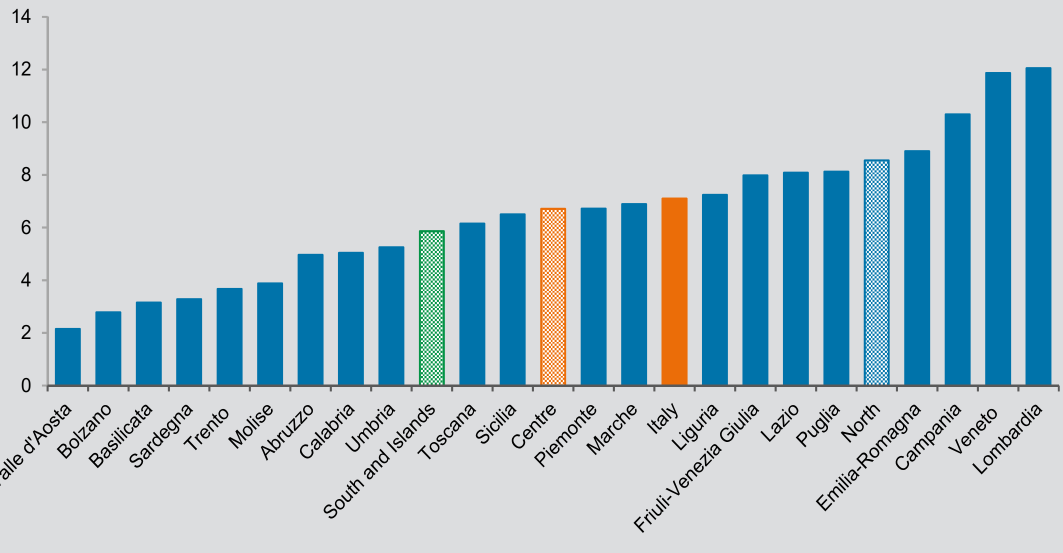
3 The indicator considers, net of overlaps, only the land surfaces of the sites included in the official list of protected natural areas published by MATTM and those belonging to the Natura 2000 Network. The latter include the Sites of Community Importance (Sic), identified by the Regions and subsequently designated as Special Areas of Conservation (Zsc) according to the Directive 92/43/EEC "Habitat", and the Special Protection Areas (Zps) established according to the Directive 2009/147/EC "Birds".

The availability of public urban parks and gardens in Italian capital cities is 32.8 square meters per inhabitant. Since 2011, this value is on the rise, but recorded only slight variations (+0.6% per year, and only +0.3% in southern cities). Public green areas, however, are not equally distributed among the 109 provincial capitals, since about 50% of the total surface is concentrated in just 11 cities and one city out of ten does not reach the minimum standard, required by law, of 9 square meters per inhabitant.

Gradual increase in soil consumption

The expansion of artificial cover on natural soil reduces the permeability and functional development of the land. This phenomenon can be considered practically irreversible in the short term, given the difficulty in carrying out demolition, de-impermeabilisation and renaturation work. For this reason, land consumption is similar to other forms of consumption of non-renewable resources.
In 2019, new artificial ground cover amounted to 57.5 square kilometres, an increase of 22.1 square kilometres over the previous year. An increase that, unfortunately, has been constant in recent years, correlated with that of building production, which is its main cause. The target of zero soil consumption, set by the European Commission since 2006, therefore still seems very ambitious. Ispra estimates show that in 2019 the amount of soil consumed represents 7.1% of the national territory. In the North, the figure is higher (8.6%), slightly lower in the Centre (6.7%) and in the South (5.9%).
The regions with the highest share of consumed soil are Lombardia, Veneto and Campania (Figure 6). The largest regional increases between 2018 and 2019 occurred in Veneto (+785 hectares), Lombardia (+642), Puglia (+625), Sicilia (+611) and Emilia-Romagna (+404). Valle d'Aosta is the first region with almost zero consumption (only 3 hectares more). In terms of percentage increase compared to the 2018 area, the highest values are those of Puglia (+0.40%), Abruzzo (+0.39%), Sicilia (+0.37%) and Veneto (+0.36%).

Figure 6. Percentage of soil sealed following a change from non-artificial to artificial coverage by region. Year 2019. Percentage value of the regional area



Source: Ispra, Soil consumption, territorial dynamics and ecosystem services (2020 Report)

13% of the population live in areas at hydrogeological risk

Among the phenomena that cause soil degradation, the most relevant and widespread are landslides and floods. Due to the geomorphological characteristics of our Country, hydrogeological risk is widespread throughout the territory, with local variations, also in terms of hazard for human life. The Research Institute for Hydrogeological Protection of the CNR, as part of the Polaris project, recorded 8,777 victims in 2019 throughout the Country, including dead, injured, missing and displaced. In 2020, there were 3,078 victims.

The increasing frequency of extreme weather events, and in particular of intense and localised rainfall, just heightens such risk. Human activities that exacerbate the vulnerability of the territory are cementing, unauthorised building, abandonment of highlands, irresponsible quarrying, unsustainable cultivation techniques, lack of maintenance of waterways and invasive and careless interventions on them. In 2017, according to Ispra estimates, 12.6% of the Italian population lived in areas classified at high or very high landslide hazard and in areas of medium and high hydraulic hazard (i.e. periodically subject to flooding, with return periods varying between 100 and 200 years). Compared to estimates based on the 2015 mapping, the indicators show an overall worsening on both fronts. The population most exposed to risk is mainly living in the North. The regions with the highest percentage values are Emilia-Romagna, Liguria and Valle d'Aosta, followed by regions in the Centre and in the South, Toscana and Abruzzo in particular.

Bathing permitted on only two-thirds of Italian coasts

In 2019, the percentage of marine coasts where bathing is allowed stands at 65.5%, slightly decreasing for the third consecutive year: 1 point less than 2018 (66.5%) and about 2 points less than 2016 (67.2%), which was the maximum observed since 2013[4]. The regions with the highest shares of bathing coastline are Basilicata and Calabria (90.8% and 85.3%), while those with most restrictions are Friuli-Venezia Giulia (42.2%) and Sicilia (50.8%). The most significant decreases compared to 2018 are observed in Sicilia (from 55.4% to 50.8%) and Abruzzo (from 77.5% to 75.5%). In three regions (Campania, Sardegna and Calabria), on the other hand, the indicator shows an increase, albeit very slight, in the availability of the coast for bathing.

42% of water input to municipal drinking water supply networks gets lost

In 2018, drinking water supply network operators delivered 4.7 billion cubic metres (215 litres per inhabitant per day) to ensure the water uses of the population, small businesses, hotels, offices, commercial, productive, agricultural and industrial activities directly connected to the urban networks, and to meet public demands (street washing, school and hospital water, watering of green areas, fountains and fire-fighting services).[5]

4 The criteria for determining the bathing prohibition are established by the Ministerial Decree (Health) of 30/3/2010, implementing Legislative Decree. n. 116 of 30/5/2008, implementing Directive 2006/7/EC.

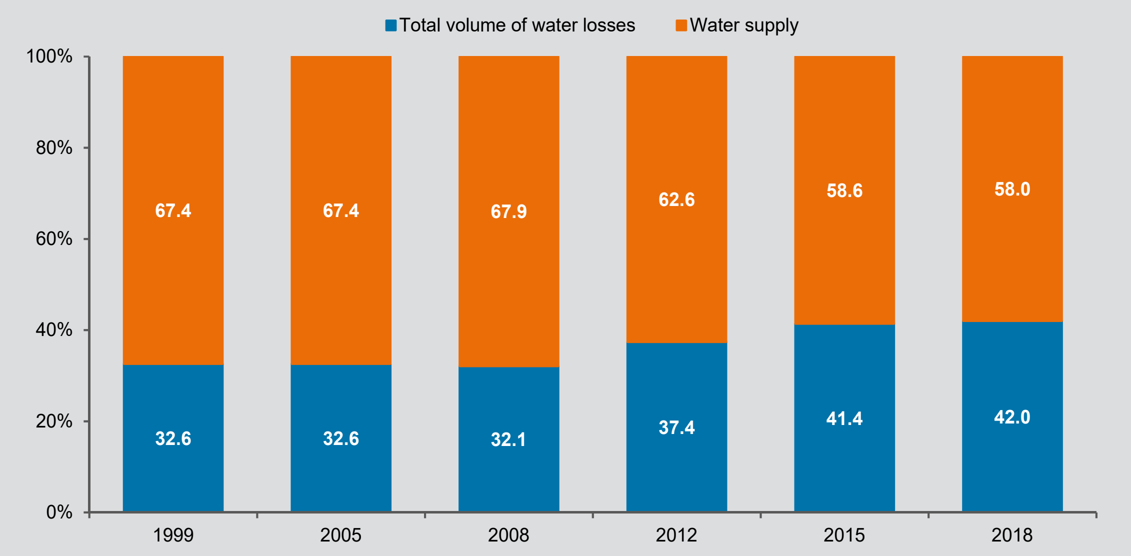
5 This quantity includes both billed and free uses.

The per capita supply is on average higher in the municipalities of the North, with a peak in the North-West (254 litres per inhabitant per day) where regional values range from 233 litres per inhabitant per day in Piemonte to 446 in Valle d'Aosta (the region with the highest value). Significantly higher than average per capita volumes may be linked to the spread of drinking fountains, especially in mountainous areas, which can give rise to anything but marginal supplies. Residents in the Islands receive, on average, the lowest volume of water (189 litres per inhabitant per day), although the lowest regional values of the indicator are observed in Umbria (164) and Puglia (152).
While 8.2 billion cubic metres of drinking water were pumped into the municipal supply networks (371 litres per inhabitant per day), total water losses amounted to 3.4 billion cubic metres (156 litres per inhabitant per day). This is a truly considerable volume, equal to the average consumption of about 44 million people for a whole year. In percentage terms, 42% of the water entering the network is lost in distribution.

Severe inefficiency in the drinking water supply network: water losses on the rise

Compared to 2015, total percentage network losses have increased by about half a point (they were 41.4%), confirming the serious inefficiency of the drinking water infrastructure. Thus, the relentless increase in water leakage continues; it has been recorded, at national level, on an almost continuous basis for 20 years, with only a slight decrease in 2008 compared to the previous figure (Figure 7).
Also compared to 2015, in 13 out of 21 regions and autonomous provinces total water losses in distribution are increasing. These range from minimal increases, as in the case of Lazio and Emilia-Romagna, to quite significant increases, as in Liguria, Umbria and Abruzzo. Among the regions where the indicator decreases, the only ones to present a significant change are Friuli-Venezia Giulia, Basilicata and Sardegna, although they still present very high levels of leakage, higher than the national value.

Figure 7. Water supplied for authorised uses and total water losses. Years 1999-2018. Percentage of the volumes fed into the network

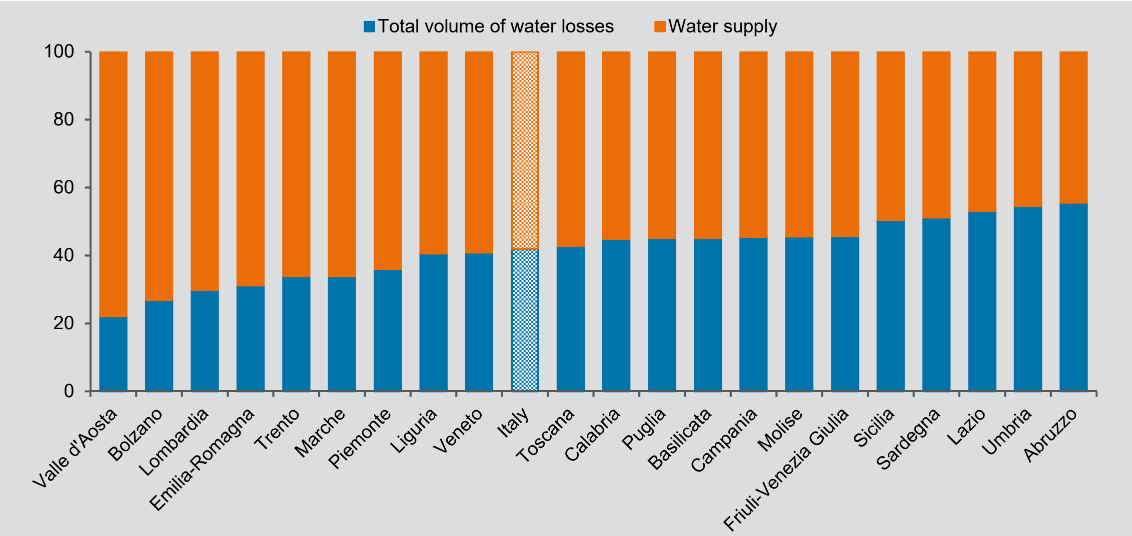


Source: Istat, Urban Water Census

In more than half of the regions, total water losses in municipal drinking water supply networks exceed 45%

In Italy, in about one in three regions water losses in municipal drinking water supply networks are below 35%. The proportion of those with high leakage is greater: one region out of two has total water losses in distribution by more than 45% (Figure 8).
An even more inadequate infrastructural situation is observed in the central and southern regions, which present significant criticalities in about one out of two municipalities. In Abruzzo (55.6%), Umbria (54.6%) and Lazio (53.1%), where the highest regional values are recorded, more than half of the municipalities report distribution losses equal to at least 55% of the volume fed into the network.
A lower level of total network water losses, compared to the national average, is found in all northern regions, excep Friuli-Venezia Giulia (45.7%). The lowest value in 2018 is recorded in Valle d'Aosta (22.1%), although it is about 4 percentage points higher than in 2015.

Figure 8. Water delivered for authorised uses and total water losses in distribution by region. Year 2018. Percentage values of volume injected into the network

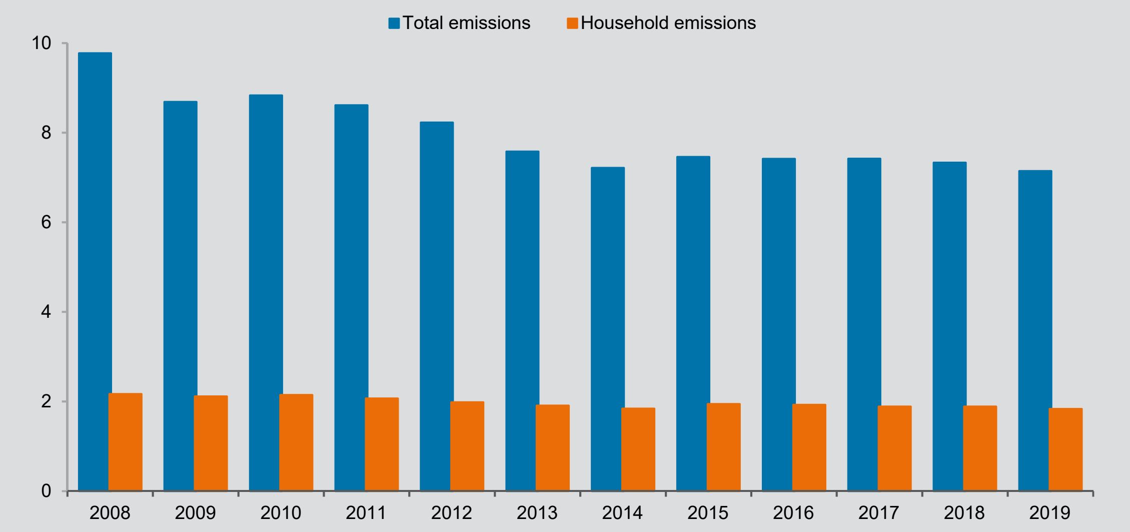


Source: Istat, Urban Water Census

CO_2 and greenhouse gas emissions stable in recent years, as well as the domestic material consumption

In 2019, the emissions of CO_2 and other climate-changing gases (or greenhouse gases, GHG) per capita are 7.1 tonnes of CO_2 equivalent. This confirms the slow decline that began in 2015, when the tonnes emitted per capita were 7.5 (Figure 9).
The share of the emissions generated by households, mainly due to the fuel consumption for private transport and domestic uses, is 25.7%, corresponding to 1.8 tonnes of CO_2 equivalent per capita, slightly lower than in 2015 (26.1%), but higher than in 2008 (22.2%).

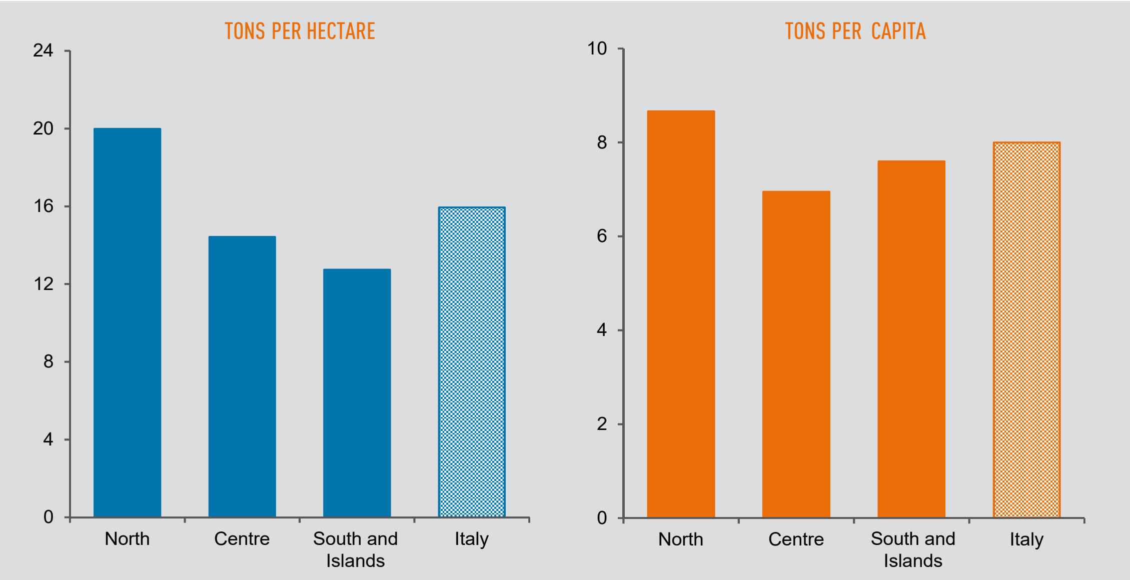
Figure 9. Total emissions of CO_2 and other greenhouse gasses and share generated by households. Years 2008-2019 (a). Tonne of CO_2 equivalent per capita



Source: Istat, Environmental accounts - NAMEA air emissions

As for the Domestic material consumption (Dmc), which represents the pressure exerted by the economic system on the environment by effect of the country's socio-economic dynamics, the phase of stability, started in 2013, keeps going on. In 2018, 489.9 million tonnes of material were consumed, 1.7% more than the previous year.
Considering the breakdown by geographic area, in 2017 50% of Dmc took place in the North, one third in the South and Islands (33%) and the rest in the Centre (17%). In terms of consumption per hectare, the South and Islands show the lowest values, 12.2 tonnes per hectare. The variability between the geographic areas is smaller in terms of per capita values, ranging from 8.7 tonnes per capita in the North to 6.9 in the Centre (Figure 10).

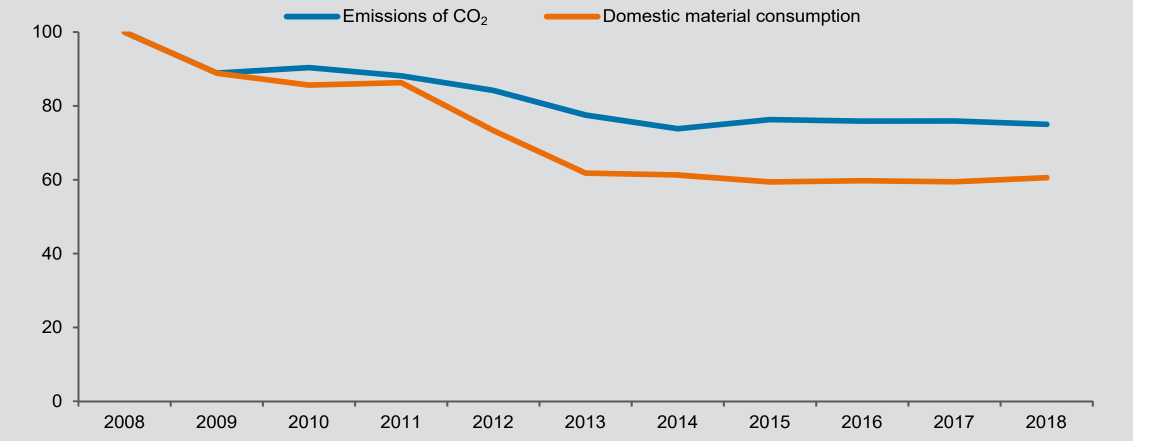
Figure 10. Domestic material consumption per hectare and per capita by geographic area. Year 2017. Tonnes per hectare and per capita



Source: Istat, Material flow accounts

A comparison of the trends of the two pressure indicators by index numbers (year 2008=100) allows us to observe how, since 2013, our economic system has failed to take further steps towards sustainability, by appreciably reducing the direct extraction of domestic resources and the emissions of climate-changing gases (Figure 11).

Figure 11. Domestic material consumption and emissions of CO_2 and other greenhouse gasses. Years 2010-2018. Indexes of per capita values, year 2008 = 100



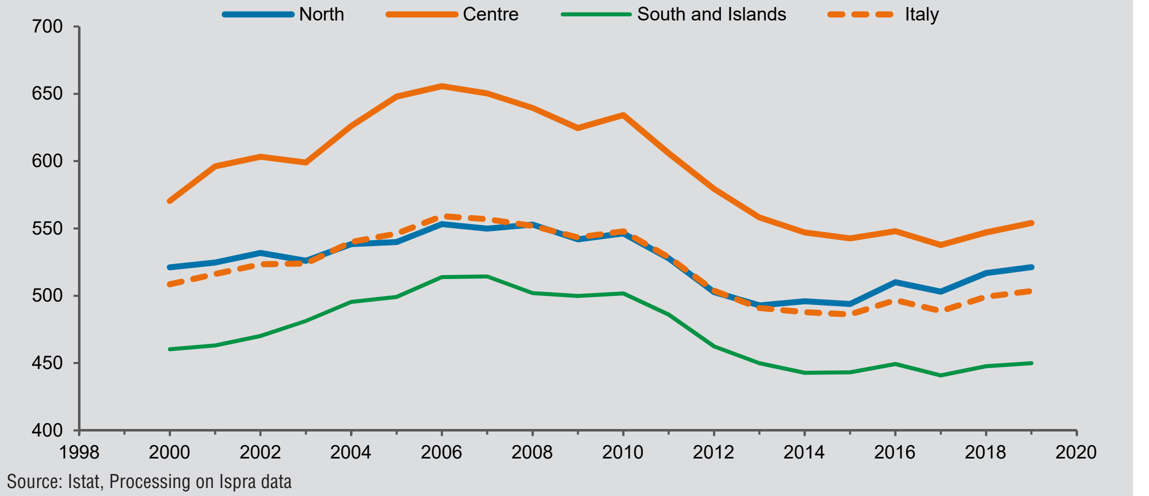
Source: Istat, Material flow accounts; Istat-Ispra, Air emissions inventory and accounts

Stable annual municipal waste production

The production of waste has an important impact on the environment, at every stage of its chain (collection, disposal, incineration, recycling, recovery), and therefore on human health (urban hygiene, soil pollution, emissions from incinerators/ incineration plants, emissions from transport/processing/storage).

The reduction of municipal waste production can also be considered the outcome of policies and consequent actions aimed at improving the environmental quality and reducing the consumption of natural resources.

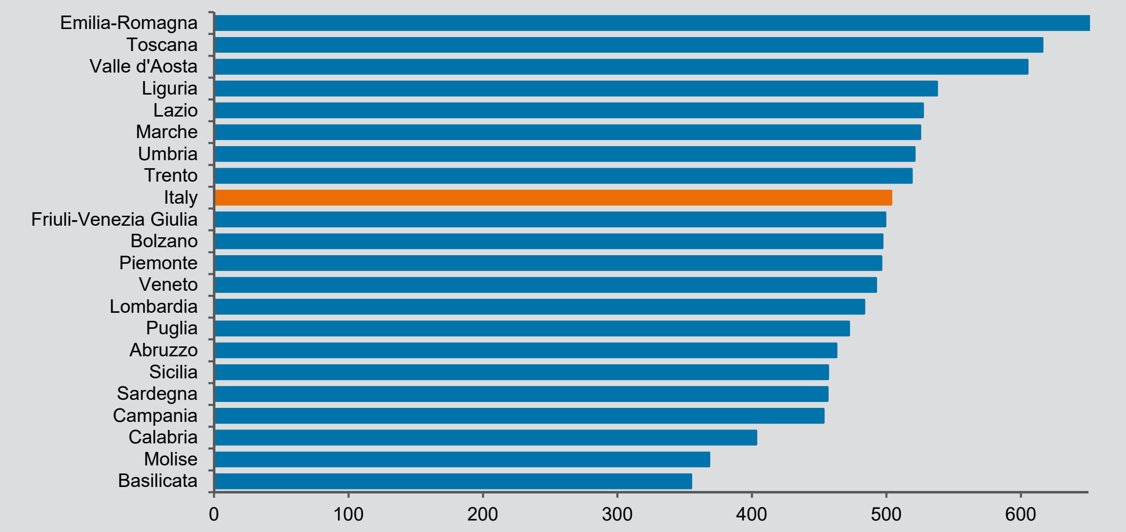
Figure 12. Municipal waste collected by geographic area. Years 2000-2019. Kg per capita



Source: Istat, Processing on Ispra data

In 2019, the production of municipal waste in Italy stands at 30.1 million tonnes, equal to 503.6 kilograms per capita, a value that is almost stable compared to 2018, but increasing compared to 2017 (+15 kilograms per capita), when one of the lowest values in the production of municipal waste in the last twenty years was recorded (Figure 12).
From 1996 to 2006, an increase is observed, reaching a maximum value of 559.1 kilograms, and then falling to a minimum of 486.2 kilograms per capita in 2015. In the period 2006-2019, there was a per capita decrease of about 10%, although since 2017 the value has started to increase slightly again.
The North produces almost half of the municipal waste and contributes more than other areas of the country to the increase recorded since 2017, although in per capita terms values are similar to the national average. The regions of the Centre produce the highest value (554.1 kilograms per capita), which is more than 100 kilograms higher than in the South and Islands.
Emilia-Romagna has the highest per capita values (661 kilograms per inhabitant), while Basilicata has the lowest, with 353 kilograms per capita (Figure 13).

Figure 13. Municipal waste collected by region. Year 2019. Kg per capita



Source: Istat, Processing on Ispra data

Landfill of waste

Waste that cannot be further valorised is disposed of in landfills, which is in theory the last option in the hierarchy of waste management. The Eu target is to landfill no more than 10% of municipal waste by 2035.
Since the early 2000s, there has been a gradual reduction in this type of treatment of municipal waste, which has a high impact on the environment and human health.
In Italy, in 2019, 20.9% of the total amount of municipal waste was sent to landfill, marking a strong reduction compared to the past, due to material and energy recovery operations. In the North, the figure was 10%, while it exceeded 30% in the South and Islands.
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. In particular, the

low value of the phenomenon for Campania (1.3%) depends largely on the export of waste outside the region. On the contrary, the high percentage value of Molise is due to the quantities imported from other regions and it does not depend on the low values of domestic production.

During the lockdown, there was a reduction in municipal waste production

In the months marked by the lockdown, the closure of the majority of production activities affected the total production of municipal waste, resulting in a clear reduction.
The Utilitalia foundation estimates that, from February 21st to August 8th of 2020, the overall municipal waste decreased by 16% compared to the same period in 2019, both for separate and mixed waste collection (-15%)[6].

Complete overview of contaminated sites still difficult

In 2019, in Italy, sites contaminated by substances such as asbestos, dioxins, hydrocarbons, pesticides, PFAS (perfluoroalkyl substances) are 31,686, of which 31,645 are of regional competence and 41 of national competence[7].
Contaminated areas amount to 242,026 hectares, distributed over all Italian regions, although the phenomenon tends to polarise in the North (152,235 hectares) and in South and Islands (69,778 hectares). In absolute terms, Piemonte is the region with the largest extension of contaminated surface area (108,207 hectares), followed by Sardegna, Lombardia, Puglia and Friuli-Venezia Giulia, which have contaminated surfaces of more than 10,000 hectares. In relative terms, however, while Piemonte is the region with the highest percentage of contaminated land in relation to the total surface area (4.26%), significant portions of contaminated areas are also found in Friuli-Venezia Giulia (1.92%), Sardegna (1.24%) and Puglia (0.93%), all above the national average (0.80%).
There are currently 41 sites of national interest in Italy, covering 171,198 hectares of contaminated land area, and they are present in all regions except the Autonomous Province of Bolzano and Molise. In most cases, these are areas affected by the impacts of pre-existing or still active industrial and mining activities. The sites of national interest are concentrated in the North and South of the country, respectively with 20 sites and 116,234 hectares of surface area and 16 sites and 45,509 hectares of contaminated surface area, including the asbestos site at Casale Monferrato (73,895 hectares) in Piemonte and the Sulcis-Iglesiente-Guspinese mining district (19,751 hectares) in Sardegna. The indicator analysed does not provide a complete description of the national situation due to the still partial information provided by the regional registers. It makes possible, however, an initial assessment of the quality of the environment and of the regional areas potentially at risk for community well-being and local economic development.

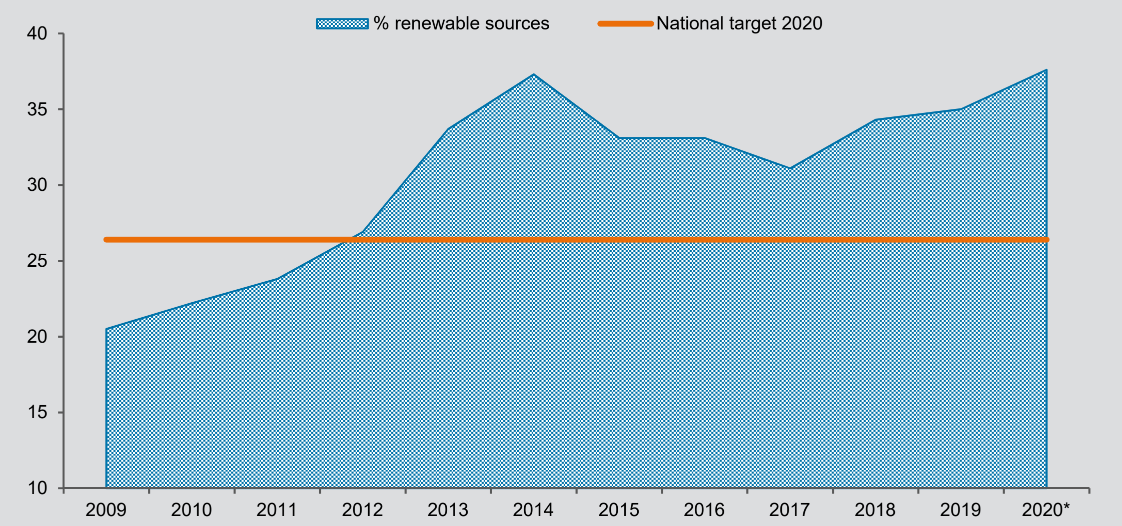
6 Green Book "I dati sulla gestione dei rifiuti urbani in Italia" 2020.

7 The Sites of National Interest (Sin) and Sites of Regional Interest (Sir) for the purposes of remediation are identified by Article 252, paragraph 1 of Legislative Decree 152/06 and subsequent amendments and additions. The identification, definition of the perimeters and remediation of contaminated sites are the responsibility of the regions, the competence of the sites defined as of "national interest" is delegated to the Ministry of Environment in relation to the characteristics of the area, the quantity and danger of pollutants and the importance of the impact on the surrounding environment in terms of health and ecological risk.

Energy consumption reduces in 2020, as the share of renewable energy increases

The share of electricity consumption generated from renewable energy sources (hydroelectric, biomass thermal, geothermal, wind and photovoltaic) has been growing steadily since 2017, reaching values of over 37% in 2020, an increase of about 3 points in the last three years. These values are well above the 26.4% target set for 2020[8] (Figure 14).

Figure 14. Electricity from renewable sources. Years 2009-2020. Percentage values on the the gross domestic consumption of electricity

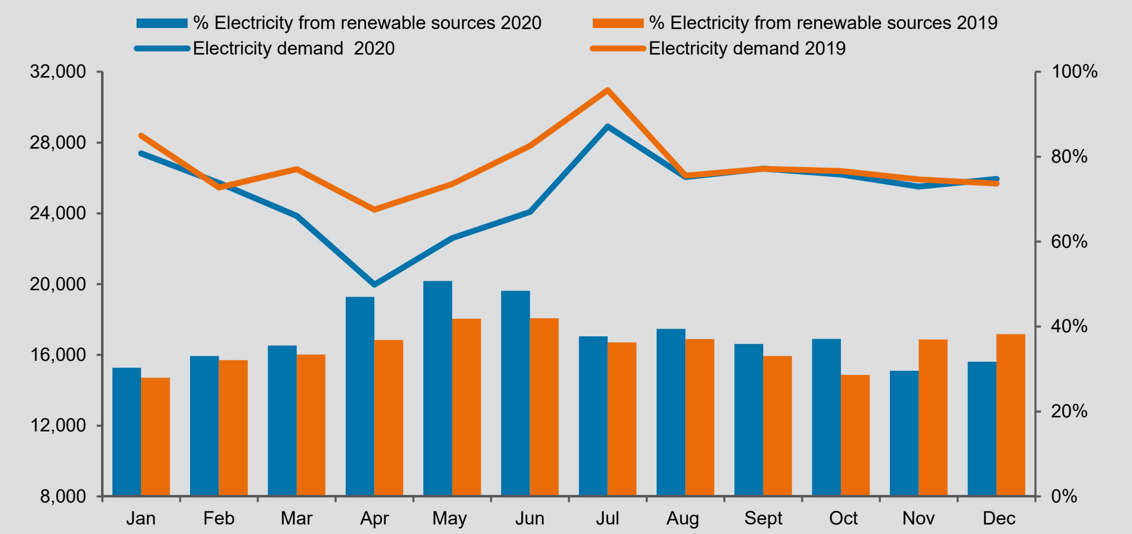


Source: Istat, Processing on Terna SpA data
(*) For the year 2020 "Monthly report on the electricity system", December 2020.

In 2020, the overall electricity demand (302.7 TWh) was lower (-5.3%) than in 2019[9]. In the months from March to July, coinciding with the lockdown set for the COVID-19 health emergency, the values of electricity consumption were always lower than the corresponding monthly values for 2019, reaching a reduction of over 17% in April. The highest consumption was recorded in July (28.9 TWh), but this was about 7% lower than the corresponding monthly value of the previous year (Figure 15).
In 2020, production from renewable sources increased by approximately 1%, mainly due to the increase in photovoltaic energy production. In May, renewable sources contributed more than 53%, exceeding the share generated by thermoelectric power plants powered by the more polluting fossil fuels.

8 The target is set out in the National Renewable Energy Action Plan (NREAP), in accordance with Directive 2009/28/EC.
9 Terna S.p.A. - Monthly electricity system report, December 2020.

Figure 15. Electricity demand and consumption from renewable energy sources per month. Years 2019 and 2020. GWh and percentage values



Source: Istat, Processing oni Terna SpA data - Monthly electricity system report

Reduction of some pollution during the lockdown[10]

Based on the observations of the National System for Environmental Protection (SNPA) available for the year 2020, in the lockdown period, a general reduction in the concentrations of nitrogen oxides11, carbon monoxide and benzene is registered in the whole Country.

This reduction (around 50%, on avergage, for NO_2), varies over the observed period from less than 10% to over 70% at the monitoring stations located near the major roads (classified as 'urban traffic')[12].

The situation for particulate matter (PM_{10}, $PM_{2.5}$), which is a complex mixture of solid and liquid particles dispersed in the atmosphere, is less clear.

In March and April 2020, there was a reduction in electricity demand and industrial production compared to the same period in 2019. As for house heating[13], no special reductions were observed during the lockdown; on the contrary, in some areas, partly due to a colder than usual month of March, there was a moderate increase in emissions compared to the average for the period.

Moreover, the lockdown did not affect ammonia emissions[14] produced by agricultural and livestock activities, which were not concerned by the COVID-19 related limitation measures.

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10 The section on the air quality dimension was carried out in collaboration with Ispra - Silvia Brini and Giorgio Cattani.

11 Nitrogen oxide (NO) is the predominant form emitted directly; nitrogen dioxide (NO_2) is partly emitted directly and partly formed in the atmosphere.

12 As road transport is the main anthropogenic source of nitrogen oxides (on a national basis, more than 50% of emissions are attributable to vehicle traffic) and one of the main sources of benzene and carbon monoxide, this contraction is largely explained by the significant reductions in traffic flows which, on a national basis, reached around -70% for light vehicles and -38% for heavy vehicles from mid-March onwards, before gradually returning to previous levels in the first half of June.

13 This includes emissions from biomass combustion, which are an important contributor to primary PM concentrations.

14 Important precursor of secondary particulate matter.

The comparison with previous years should be interpreted with caution due to the variability of meteorological conditions that can occur from one year to another. Periods with higher PM_{10} values are often periods of atmospheric stagnation and reduced recirculation, and coincide with high $PM_{2.5}$ values; they are particularly frequent in the Po valley, in the flat inland areas, and in the subalpine and sub-Apennine valleys during the winter months. The lockdown has only marginally affected the most critical period of the year for the accumulation of pollutants. As a result, in 2020, according to a preliminary estimate of SNPA, about 29% of the monitoring stations located throughout the national territory have detected exceedances of the threshold values, confirming the difficulty to comply with the legal limits set, despite the long-term trend of decreasing concentrations of particulate matter.

$PM_{2.5}$ air pollution: severe situation especially in the North

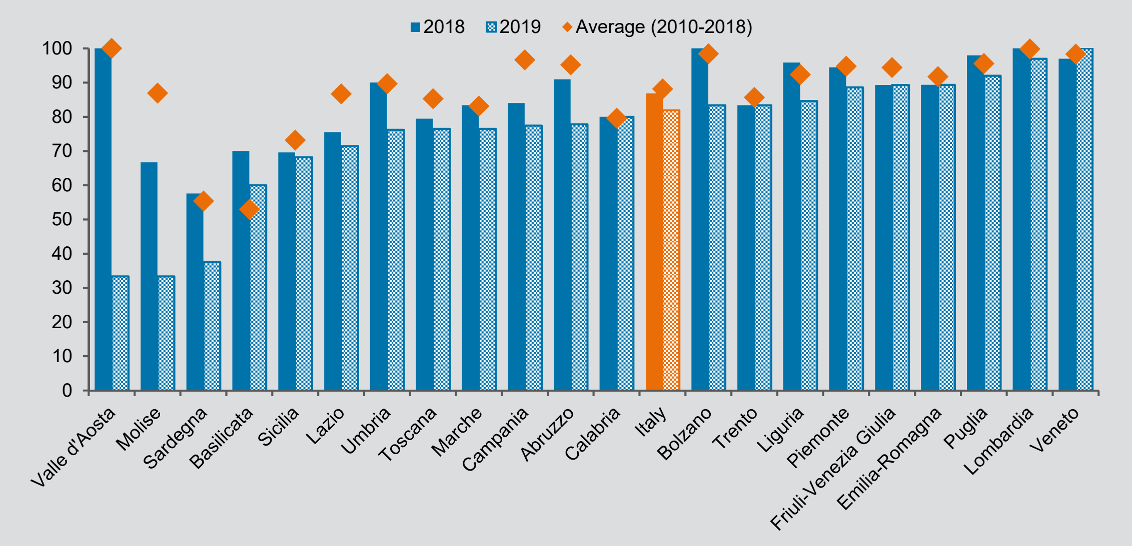
Air pollution caused by human activities is a degradation factor for air quality, and a risk factor for human health and the ecosystems. It occurs when gases, dust and smoke are released into the air. The World Health Organisation (WHO) classifies air pollution as the main environmental health risk, especially in Europe.
Air pollution depends in a complex way on multiple factors, which can be observed more effectively at a micro scale than at a local or regional scale. This makes the selection of meaningful air quality indicators difficult. Generally, we focus on those for which a link between exposure and short- and long-term health effects is recognised. Of 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, the levels and temporal variability of concentrations of other pollutants. The $PM_{2.5}$ indicator, which is suitable for assessing air pollution in urban, suburban and rural areas, is defined with reference to the percentage of valid measurements above the WHO health threshold value (10 μg/m^3) 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) and location (urban, suburban and rural). Given the widespread distribution of regional monitoring stations, the indicator is representative of the situation over the entire territory of the regions and autonomous provinces[15].
In Italy, since 2010, exceedances of the WHO reference values were always detected in over 80% of the measurements made. However, there has been a slight trend of improvement over the last ten years, from 92.9% in 2010 to 81.9% in 2019.
The indicator reaches the highest percentages in the northern regions, especially those in the Po valley, with an average ranging from 97.5% in 2010 to 91.2% in 2019. In the Centre, a more marked improvement trend is observed (from 92.2% in 2010 to 74.4% in 2019). In the South and Islands, on the other hand, the trend is more attenuated and slowly improving, from 84.6% in 2010 to 73.4% in 2019, with values below 70% in the two-year period 2016-2017.

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

The regional detail of the indicator in 2019, compared to the previous year and to the average of the period 2010-2018, shows an improvement in all territories, with the exception of Veneto, where the exceedances increase, compared both to 2018 (+3 percentage points) and to the 2010-2018 average (+1.7).

In 2019, besides Veneto (100% exceedances per 100 valid measurements), all other regions with the highest $PM_{2.5}$ pollution (over 80%) are in the North, with the exception of Puglia (95.6%). In addition, most regions in central and southern Italy also show significantly high values of the indicator (between 60 and 80%) (Figure 16).

Figure 16. Percentage of valid measurements above the WHO health reference value (10 µg/m) out of the total number of valid measurements of annual average $PM_{2.5}$ concentrations by region. Years 2018, 2019 and 2010-2018 average. Per 100 valid measurements

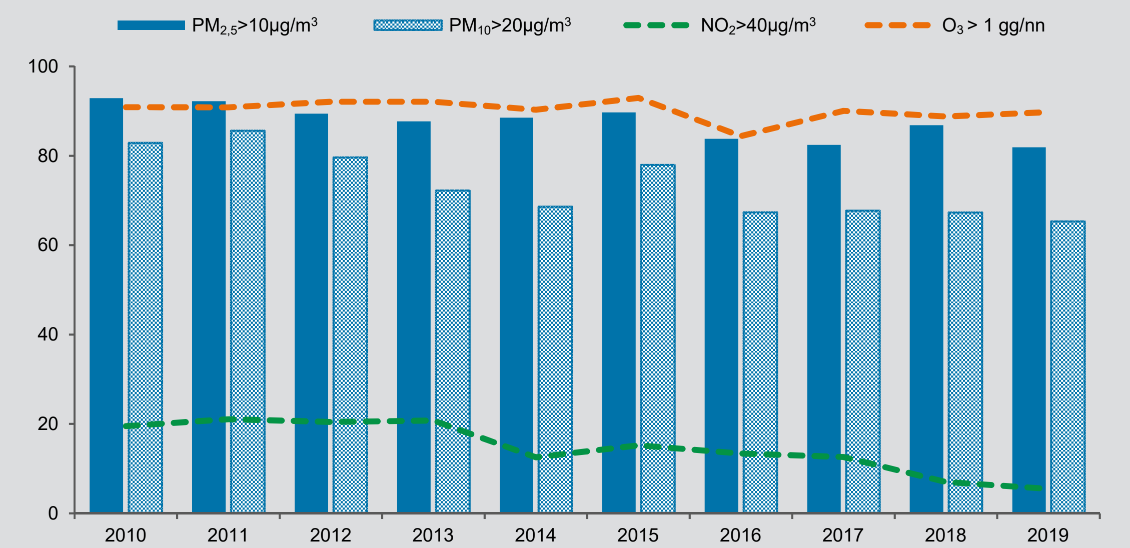


Source: Istat, Processing on Ispra data

Other pollutants also exceeding limits

$PM_{2.5}$ is strongly correlated with PM_{10} (which partially includes it), as well as with NO_2 and O_3, which are produced by chemical transformations in the atmosphere involving similar precursors. The relevance of the indicator is evident when comparing its trend with those of PM_{10} exceedances above the WHO reference value, NO_2 exceedances of the EU limit, which coincides with the WHO limit, and the failure to achieve the long-term objective for Ozone (Figure 17). It is significant, in fact, that at a regional level in all the most critical situations for $PM_{2.5}$ exceedances is also observed the highest percentage of non-compliance with the long-term objective for Ozone. In Lazio, Campania and Molise, however, at values below 80% of the $PM_{2.5}$ indicator, correspond high percentages of exceedances for PM_{10} and NO_2.

Figure 17. Percentage of valid measurements of yearly average concentration of $PM_{2.5}$ and PM_{10} above the WHO health reference value (10 and 20 μg/m³ respectively), EU statutory limits of NO_2 (40 μg/m³) and failure to meet the long-term target for O_3 (>1 day/year of exceedance of daily average limit set at 120 μg/m³). Years 2010-2019. Per 100 valid measurements



Source: Istat, Processing on Ispra data

Due to the repeated exceeding of the limits set for PM_{10}, NO_2 and $PM_{2.5}$, Italy is the object of several infringement procedures under the European Directive 2008/50/EC[16]. One of the first infringement procedures opened by the European Commission versus Italy was initiated in 2014 due to the systematic and continuous exceeding of these limits in various areas of the Country. Moreover, according to the Commission, the measures envisaged by Italy are not yet sufficient to reduce the exceedance periods and to ensure compliance to norms. Human well-being and the stability of local communities strongly depend 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 unable to deal with continuous and overlapping emergencies. Families and livelihoods are put at risk by the increase in frequency and severity of extreme weather conditions. The distribution, exposure and effect of weather and such events do not affect them in the same way everywhere, but the vulnerability of different contexts can amplify or mitigate the impacts.

Average temperatures and heavy rainfall increase in 2020[17]

In meteorological and climatic terms, 2020, compared to the 1981-2010 period, confirms the gradual increase in minimum and maximum temperatures, respectively by +0.9 °C and +1.3 °C on national average. Increases are higher in the Centre (minimum temperature = +0.9 °C and maximum temperature = +1.4 °C) and in the North (minimum temperature =

16 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.

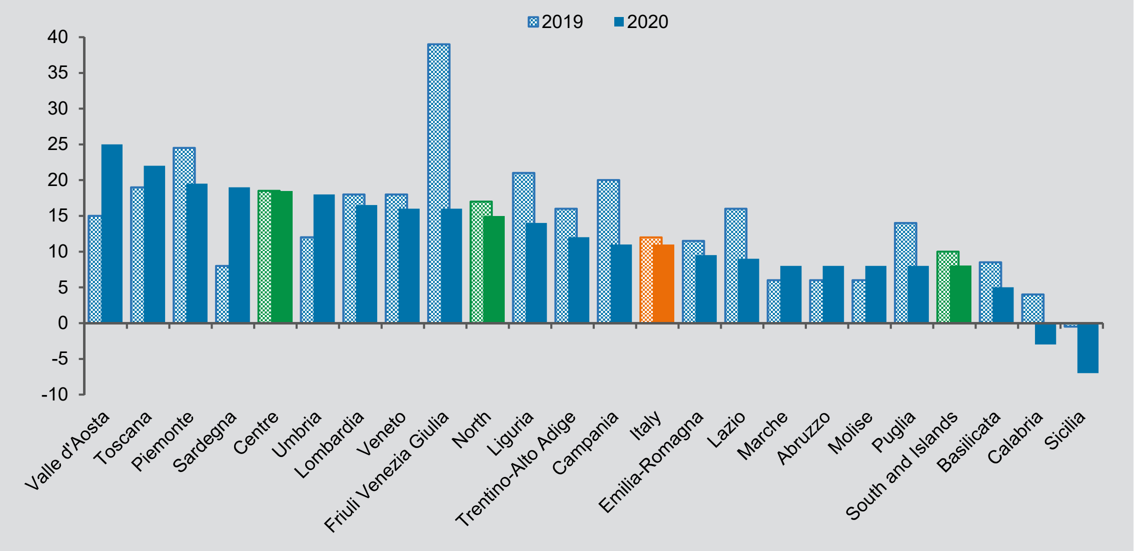
17 The analysis of weather and climate events was carried out in collaboration with Crea Agriculture and Environment - Roberta Alilla, Flora De Natale, Barbara Parisse.

+1.3 °C and maximum temperature = +1.6 °C). Precipitation also is on the raise (+1%), although with differences over the territory, with considerable increases concentrated mainly in the North-East (with peaks of +19.3% in Trentino-Alto Adige) and reductions of more than 7% in most of the South. The 2020 rainfall figure differs sharply from that recorded in 2019, where the difference at national level reached +21%.
In order to look more specifically at these variations, which are also a source of discomfort for the population, new indicators have been included in the Bes framework, measuring variations in frequency and intensity of extreme events[18].

Increasing duration of warm spells

The Warm Spell Duration Index (WSDI), which represents the number of days in the year when the maximum temperature is above the 90th percentile of the distribution over the reference climate period (1981-2010), for at least six consecutive days, is used to identify prolonged and intense periods of heat. Unlike indices based on a fixed threshold value, this index is representative of local climate variations. The WSDI identifies heat periods 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.

Figure 18. Warm spell duration index (WSDI): deviations from the climatic median (reference period 1981-2010) by region and geographic area. Years 2019 and 2020



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

In the last two years (2019-2020), the variations with respect to the climate value are always positive in all regions, except Calabria and Sicilia. Overall, 2020 shows a lower incidence of heat waves than 2019 (Figure 18). At the national level and in the areas of the North and the South, there was a slight decrease in the index, while in the Centre the situation remained unchanged. Overall, the phenomenon is less pronounced in the South.

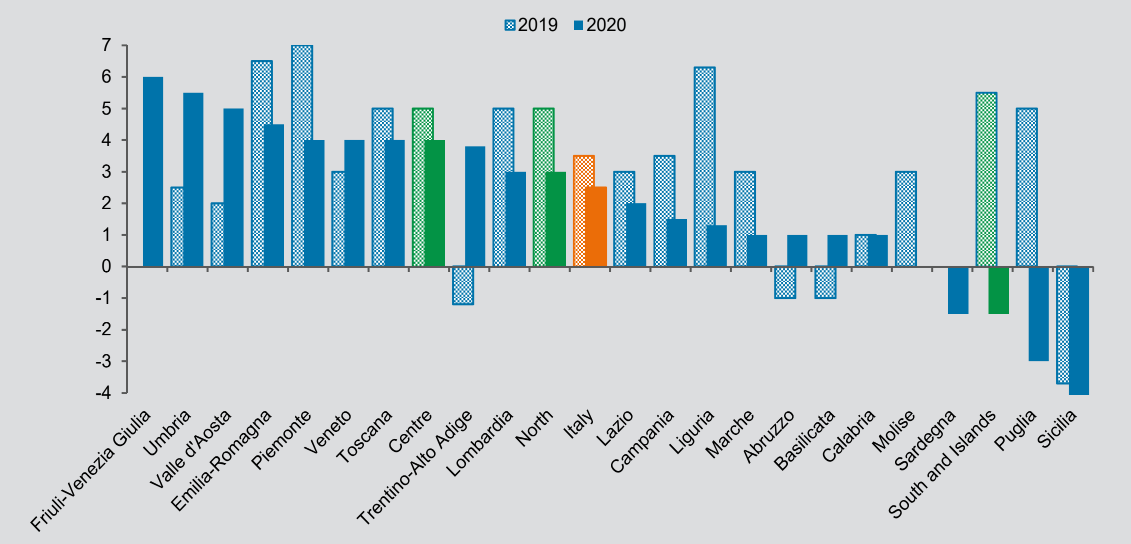
18 The source of the data is the gridded climate reanalysis dataset ERA5 hourly data on single levels from 1979 to present, from the EU Copernicus Programme.

At the national level, the worst years were 2011 and 2015, with differences of +26 and +21 days, respectively. The North (+37 and +29 days) and the Centre (+32 and +23 days) also experienced the greatest differences in these years, with the Centre also being particularly affected in 2012 (+24 days). The phenomenon is slightly less pronounced in the South, where the highest values were recorded in 2015 (+21 days) and 2017 (+19 days), and a downward trend can be seen from 2017 onwards.

Increased number of dry days in 2020

The Consecutive Dry Days (CDD) index represents the maximum number of consecutive days in a year with daily precipitation of less than 1 mm.
It is one of the most widely used indicators of extreme events to describe dry periods, the effects of which also affect the quality of the environment and thus people's health, by degrading air quality and reducing water supplies.
In the last two years, the number of consecutive days without rain was higher than the climatological median (1981-2010). The phenomenon was less pronounced in 2020 than in 2019. In the South, in particular, it is lower than the climatological median (Figure 19). The territorial variability is remarkable: especially in the North-East and in some internal peninsular areas, the index values increased in 2020, up to a variation of +6 days for Friuli-Venezia Giulia. On the contrary, in Puglia from 2019 to 2020 the CDD index decreased by 8 days.

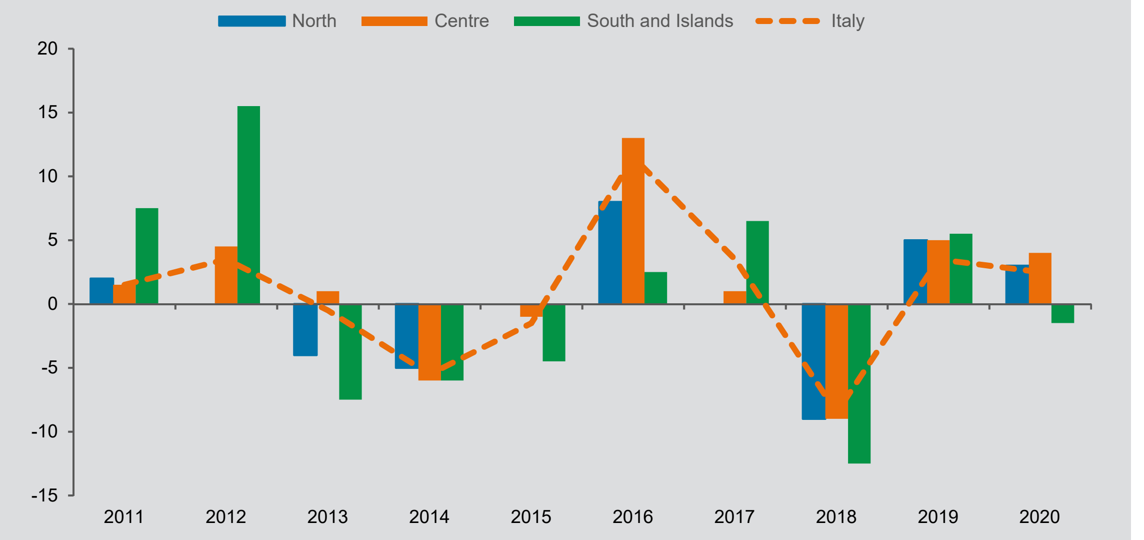
Figure 19. Consecutive Dry Days (CDD): deviations from the climatic median (reference period 1981-2010) by region and geographic area. Years 2019 and 2020



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

Figure 20 shows the cyclical trend for the decade 2011-2020, with maximum positive differences for the South and Islands and the Centre, respectively in 2012 (+16 days) and 2016 (+13 days), and peaks of negative changes in 2018 for all geographical areas (down to -13 days for the South and Islands).

Figure 20. Consecutive Dry Days (CDD): deviations from the climatic median (reference period 1981-2010) by geographic area. Years 2011-2020



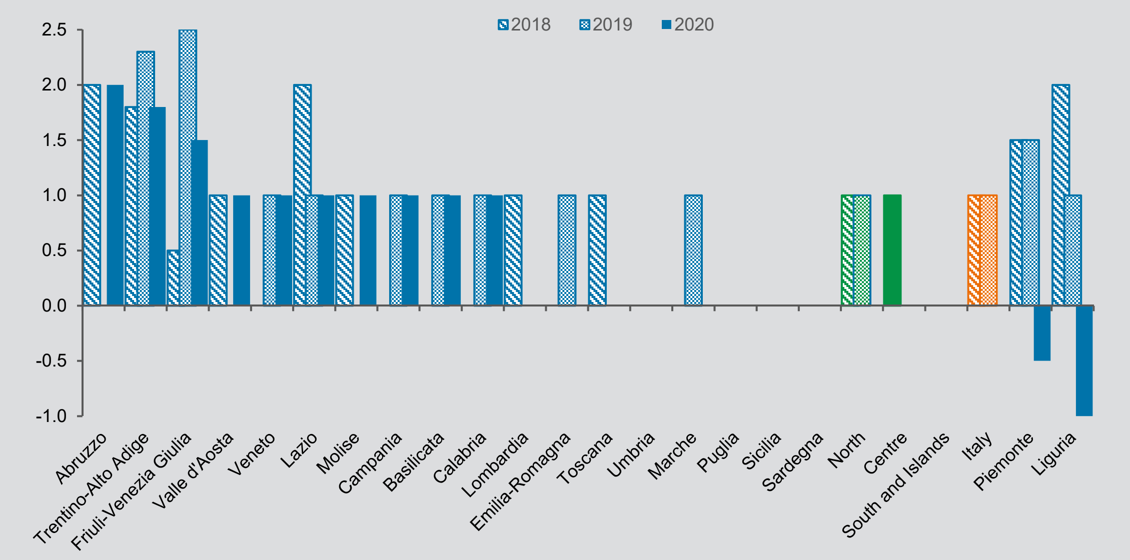
Source: Copernicus - European Union's Earth Observation Programme - Gridded dataset of climate reanalysis, ERA5 hourly data

High variability of extreme precipitation events

The R50mm index (number of severe rain days) represents the number of days in a year when the total daily precipitation is 50 mm or more. It is an index of extreme weather and climate events, measuring days of very heavy rainfall[19], that have an impact on people's well-being and health. In particular, floods or landslides are often associated with such events in our Country. Actually, most of the floods occurred in our Country coincided with similar events. For instance, the flood of Florence in November 1966 came after the falling, over the entire Arno river basin, of 160 mm of rain in 24 hours, with peaks of 250-300 mm. In Italy, the R50 mm index shows a positive variation (+1 day) in 6 of the 10 years observed. The index does not show negative variations, except for the North in 2015.
In 2020, in about half of the regions, the index variations were positive, while in Piemonte and Liguria they were negative. In the remaining regions, the index value coincides with the climate median. Considering the three geographic breakdowns and the whole Country, 2020 data show no change, while the South stands out for the absence of changes in all three years.

19 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.

Figure 21. Extreme precipitation events (R50mm): deviations from the climatic median (reference period 1981-2010) by region and geographic area. Years 2018-2020



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

The trend of the absolute values of the R50mm index in the last ten years locates the most intense phenomena in Friuli-Venezia Giulia, Liguria and the Autonomous Province of Trento. Friuli-Venezia Giulia stands out for exceeding the climatic median value (2.5 days) over the whole period, except for the year 2015, with a peak in 2014, with 6 days of very intense rain. In the Autonomous Province of Trento, variations were positive for 6 out of 10 years, with a peak of 4 days in 2020, 3 more than the median value, and a general upward trend over the observed period. The maximum value in Liguria was recorded in 2018 (4 days, twice the climatic median). In 2019, positive deviations were detected in the three territorial units.

Indicators

1. **Emissions of CO_2 and other greenhouse gasses:** Tonnes of CO_2 equivalent per inhabitant.
   Source: Istat-Ispra, Air emissions inventory and accounts.
2. **Domestic material consumption:** Domestic material consumption measures the apparent consumption of materials in a national economy, i.e. materials that are used in economic processes in a given year. It is calculated as direct imports (IM) of material plus domestic extraction (DE) of materials minus direct exports (EX).
   Source: Istat, Material flow accounts.
3. **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).
   Source: Istat, Urban Water Census.
4. **Landfill of waste:** Percentage of municipal waste sent to landfill (including municipal waste streams into and out of other regions) on total municipal waste collected.
   Source: Ispra, Waste statistics.
5. **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 on Ispra data.
6. **Coastal bathing waters:** Percentage of authorized coastal bathing waters on the total of the coastal line in accordance with the regulations in force. The indicator is calculated by subtracting from the bathing waters the stretches of coast forbidden for bathing during the entire bathing season due to levels of contaminants beyond the thresholds of health risk.
   Source: Istat, Processing on Ministry of Health data.
7. **Urban green:** Square meters of urban parks and gardens per inhabitants in provincial capital Municipalities.
   Source: Istat, Survey on urban environmental data.
8. **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.
9. **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.
10. **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.
11. **Contaminated sites:** Size of contaminated sites.
    Source: Istat, Processing of data from Ministry of Environment, Land and Sea and Ispra.
12. **Population at risk of landslides:** Percentage of population living in areas subject to landslide on total population. The population considered is that of the 2011 Census. The Indicator is calculated on the basis of the ISPRA National Mosaicature of the Hydrogeological Plans (PAI). The areas considered also include the areas of possible evolution of current phenomena and those susceptible to new landslides.
    Source: Ispra, Hydrogeological instability in Italy: hazard and risk indicators.
13. **Population at risk of flood:** Population at flood risk resident in medium flood hazard zones (Return period 100-200 years; D. Lgs. 49/2010). The population considered is that of the 2011 Census. The Indicator is calculated on the basis of the ISPRA National Mosaicature of the Hydrogeological Plans (PAI), with reference to risk scenario P2.
    Source: Ispra, Hydrogeological instability in Italy: hazard and risk indicators.
14. **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.
15. **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 on Ministry of the Ecological Transition data.
16. **Electricity from renewable sources:** Percentage of energy consumption provided by renewable sources on gross electricity consumption.
    Source: Terna S.p.A., Annual statistics of electricity production and consumption in Italy.
17. **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.
18. **Municipal waste collected:** Municipal waste per capita (in Kg).
    Source: Istat, Processing on Ispra data.
19. **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 1979-2009.
    Source: Copernicus - European Union's Earth Observation Programme - Gridded dataset of climate reanalysis, ERA5 hourly data.
20. **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.
21. **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.

Indicators by region and geographic area

REGIONS AND GEOGRAPHIC AREAS	Emissions of CO_2 and other greenhouse gases (a) 2019 (*)	Domestic material consumption (b) 2019	Water losses in urban supply system (c) 2018	Landfill of waste (d) 2019	Air quality - $PM_{2.5}$ (e) 2019	Coastal bathing waters (f) 2019	Urban green (g) 2018	Satisfaction for the environment (h) 2020 (*)	Concern for biodiversity loss (h) 2020 (*)
Piemonte	....	....	36.0	12.0	88.6	-	25.7	70.7	26.0
Valle d'Aosta/Vallée d'Aoste	....	....	22.1	39.5	33.3	-	18.9	84.2	24.2
Liguria	....	....	40.6	36.9	84.6	57.4	7.2	78.9	28.0
Lombardia	....	....	29.8	4.2	97.0	-	28.2	69.5	25.2
Trentino-Alto Adige/Südtirol	....	....	31.1	11.5	83.3	-	222.9	89.5	28.0
Bolzano/Bozen	....	....	*26.9*	*1.3*	*83.3*	-	*21.5*	*87.9*	*31.7*
Trento	....	....	*33.9*	*20.9*	*83.3*	-	*406.2*	*91.0*	*24.3*
Veneto	....	....	40.9	14.4	100.0	64.2	30.1	73.1	25.2
Friuli-Venezia Giulia	....	....	45.7	7.8	89.3	42.2	67.3	85.3	27.3
Emilia-Romagna	....	....	31.2	9.4	89.4	61.7	43.1	72.8	27.9
Toscana	....	....	42.8	33.8	76.5	71.3	23.2	79.0	26.3
Umbria	....	....	54.6	41.1	76.2	-	98.6	77.9	24.2
Marche	....	....	33.9	42.8	76.5	73.2	31.4	80.7	22.5
Lazio	....	....	53.1	20.2	71.4	69.5	21.3	64.7	25.6
Abruzzo	....	....	55.6	34.4	77.8	75.5	27.2	74.6	23.6
Molise	....	....	45.6	90.0	33.3	71.9	12.4	81.2	26.4
Campania	....	....	45.5	1.3	77.4	70.0	13.4	56.4	20.7
Puglia	....	....	45.1	36.0	92.0	74.7	9.4	65.9	22.2
Basilicata	....	....	45.1	26.0	60.0	90.8	555.5	78.1	17.5
Calabria	....	....	44.9	40.3	80.0	85.3	60.7	69.7	19.0
Sicilia	....	....	50.5	58.5	68.2	50.8	15.9	64.1	19.3
Sardegna	....	....	51.2	22.4	37.5	64.9	40.5	76.2	27.2
North	....	....	34.3	10.6	91.2	56.9	36.7	72.9	26.1
Centre	....	....	48.7	29.1	74.4	71.1	26.7	72.2	25.3
South and Islands	....	....	47.9	31.2	73.4	65.8	32.9	65.1	21.2
Italy	**7.1**	**484.5**	**42.0**	**20.9**	**81.9**	**65.5**	**32.8**	**70.1**	**24.3**

(a) Tonnes of CO_2 equivalent per capita.
(b) Million tonnes.
(c) Percentage of volumes fed into the network.
(d) Percentage of total municipal waste collected.
(e) Percentage of valid measurements above the WHO defined reference value (10 µg/m³) of total valid measurements of annual average concentrations of $PM_{2.5}$.
(f) Percentage of authorized bathing waters on the total of the coastline.
(g) Sq.m per capita.
(h) Per 100 persons aged 14 and over.

Concern for climate change (h)	Contaminated sites (i)	Population at risk of landslides (l)	Population at risk of flood (l)	Sewage treatment (m)	Protected natural areas (n)	Electricity from renewable sources (o)	Soil sealing from artificial land cover (n)	Municipal waste collected (p)	Warm Spell Duration Index (q)	Extreme precipitation events (q)	Consecutive Dry Days (q)
2020 (*)	2019	2017	2017	2015	2017	2018	2019	2019	2020	2020	2020
70.8	42.6	1.6	4.8	69.7	16.7	41.8	6.7	496	21.0	1.0	25.0
66.3	0.7	12.1	10.2	66.0	30.3	297.2	2.2	605	31.0	2.0	20.0
70.9	5.3	5.8	17.5	61.2	27.2	8.5	7.2	483	20.0	1.0	22.5
72.0	7.8	0.5	4.4	62.9	16.1	24.0	12.1	538	22.5	1.0	25.0
70.1	0.4	2.2	1.4	78.9	26.4	146.9	3.2	508	18.0	2.0	23.0
67.6	*0.2*	*1.6*	*2.0*	*99.7*	*24.5*	*180.7*	*2.8*	*497*	*17.0*	*2.0*	*20.0*
72.5	*0.5*	*2.9*	*0.8*	*63.6*	*28.7*	*113.2*	*3.7*	*519*	*23.5*	*4.0*	*26.0*
72.3	1.7	0.1	9.5	49.4	23.0	25.0	11.9	492	23.0	2.0	26.0
69.7	19.2	0.4	7.3	50.7	19.3	29.4	8.0	499	23.0	4.0	26.0
75.5	1.6	2.2	63.7	67.7	12.2	19.7	8.9	664	16.0	-	26.0
71.4	5.0	3.8	26.0	49.5	15.2	39.4	6.2	616	28.0	-	26.0
66.3	0.8	1.9	6.3	68.7	17.5	45.1	5.3	521	24.0	-	26.0
69.7	0.1	2.1	4.3	48.5	18.8	26.7	6.9	525	8.0	-	20.0
71.4	4.2	1.6	3.5	67.0	27.9	15.6	8.1	527	15.0	1.0	26.0
70.9	0.6	5.8	6.1	63.9	36.6	51.0	5.0	463	8.0	2.0	19.0
77.4	0.3	6.5	1.4	58.0	26.4	89.2	3.9	368	8.0	1.0	20.0
65.9	5.6	5.3	4.6	60.5	35.3	27.9	10.3	453	11.0	1.0	27.5
64.7	9.3	1.3	2.7	68.3	24.5	48.5	8.1	472	8.0	-	26.0
70.8	4.0	5.8	0.7	67.2	22.8	96.3	3.2	355	6.5	1.0	28.0
62.2	0.6	4.5	4.0	46.0	26.6	79.2	5.0	403	0.0	1.0	30.0
70.9	3.2	1.1	0.1	43.9	20.2	27.2	6.5	457	0.0	-	43.0
70.2	12.4	1.4	7.1	58.8	19.9	34.2	3.3	456	19.0	-	47.0
72.2	12.7	1.3	15.6	62.4	18.8	32.3	8.6	521	21.5	-	26.0
70.8	3.4	2.4	10.9	58.5	19.9	28.6	6.7	554	21.0	1.0	25.0
67.5	5.6	3.2	3.2	56.7	25.2	42.4	5.9	450	8.0	-	30.0
70.3	**8.0**	**2.2**	**10.4**	**59.6**	**21.6**	**34.3**	**7.1**	**504**	**17.0**	**-**	**26.0**

(i) Land area affected, values per 1,000.
(l) Percentage on total population.
(m) Percentage of the polluting loads generated.
(n) Percentage of land area.
(o) Percentage of total internal consumption. Italy data for 2019 is 35%.
(p) Kilograms per capita.
(q) Number of days.
(*) Provisional data.

11. Innovation, research and creativity[1]

Innovation, research and creativity are the foundations of social and economic progress and contribute to sustainable and long-lasting development by generating spin-offs in the quality of life and access to services and by increasing the capacity to satisfy needs. Digital transition, innovation and competitiveness are the main guiding principles of *#NextGenerationEU* [2]. The indicators of this domain measure the processes of creation, application and dissemination of knowledge and give a specific focus about the dissemination of ICT technologies. This last issue is one of the main goals of European Union policies for economic progress and social and cultural inclusion[3]. ICT centrality has been highlighted by the COVID-19 emergency, which has accelerated the use of digital technology as a response strategy to the pandemic crisis, both in the organization of public and private production activities, and in the access to goods and services by individuals and families, and, more generally, in daily life[4].

The indicators related to the diffusion of digital technologies show significant progresses made by businesses and Municipalities, albeit starting from low levels; there are also great differences by region, enterprise size and business sector. The diffusion of ICT among families and individuals, which has increased in recent years, is still held back by persistent factors of exclusion (material and immaterial), which sometimes result in a mismatch between opportunities and actual use.

While many of the monitored indicators show improvements in the creation of knowledge and its application and dissemination, Italy continues to lag behind the average of European Union countries, also because of persistent and wide gaps between northern and central Italy and the southern regions.

Women, the elderly and those who live in southern Italy lag behind in the use of the Internet

Internet use is one of the requirements for the transferability of ICT innovation in society, as well as in the economic system. In addition to the availability of infrastructure and connectivity services (monitored in the quality of services domain), individual behaviour is also important. In 2020, 69.2% of the Italian population aged 11 years and over used the Internet at least once a week in the 3 months before the interview. In 2019-2020 we saw the highest annual increase in 7 years, also driven by the pandemic crisis.

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1 This chapter was edited by Stefania Taralli, with contributions from: Francesca Licari, Valeria Mastrostefano, Alessandra Nurra, Alessandra Tinto e Laura Zannella.

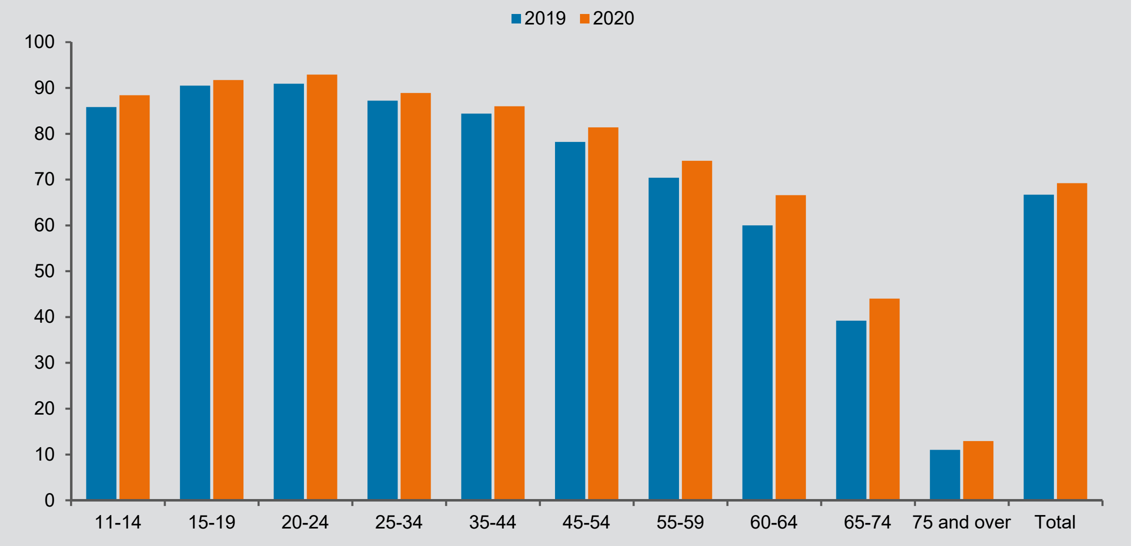
2 Europe's moment: Repair and Prepare for the Next Generation (COM(2020)0456) For the declination of the national strategy see http://www.politicheeuropee.gov.it/media/5378/linee-guida-pnrr-2020.pdf.

3 The social and economic relevance of this topic has already been clearly outlined in the Europe 2020 strategy and in the Digital Agenda for Europe 2020, and reiterated most recently in the Political guidelines of the Commission 2019-2024 and in the Digital single market strategy. The latter aims to improve online access for consumers and businesses, creating the right conditions for digital networks and services to flourish, and maximizing European digital growth through new technology investment, research and innovation.

4 In June 2020, the Commission announced in its communication "Europe's moment: Repair and Prepare for the Next Generation" (COM(2020)0456) that the digital single market will be a pillar of post-COVID-19 recovery. For an analysis of the impact of the COVID-19 pandemic on digital transformation in OECD countries, see OECD Digital Economy Outlook 2020 (https://doi.org/10.1787/bb167041-en).

Almost all 15-24-year-olds surf the net (more than 90%), while for 60-64-year-olds the proportion of Internet regular users falls to 66.6%, and it reaches 44% among 65-74-year-olds; however, these last groups of less frequent users show the higher increases over the previous year (Figure 1).

Figure 1. Percentage of individuals aged 11 and over who used the Internet at least once a week in the 3 months prior to the interview. Years 2019 and 2020 (a). **Percentage values**



Source: Istat, Survey on the use of ICT in the Households and by individuals
(a) 2020 data are provisional.

Internet use is still characterised by a gender gap in favour of men (72.9% against 65.8% of women) that remains stable compared to the previous year. However, among young people aged 15-19 years there is a female advantage, for the next age groups and up to 59 years, these differences are very small, while they accentuate for older people, reaching 12 percentage points in favour of men in the 65-74 age group.
Wide and unchanged territorial differences emerge in 2020 as well. The disadvantage of southern Italy (63.4%) is measured in a difference of 9 percentage points from northern and central Italy (72.3%).

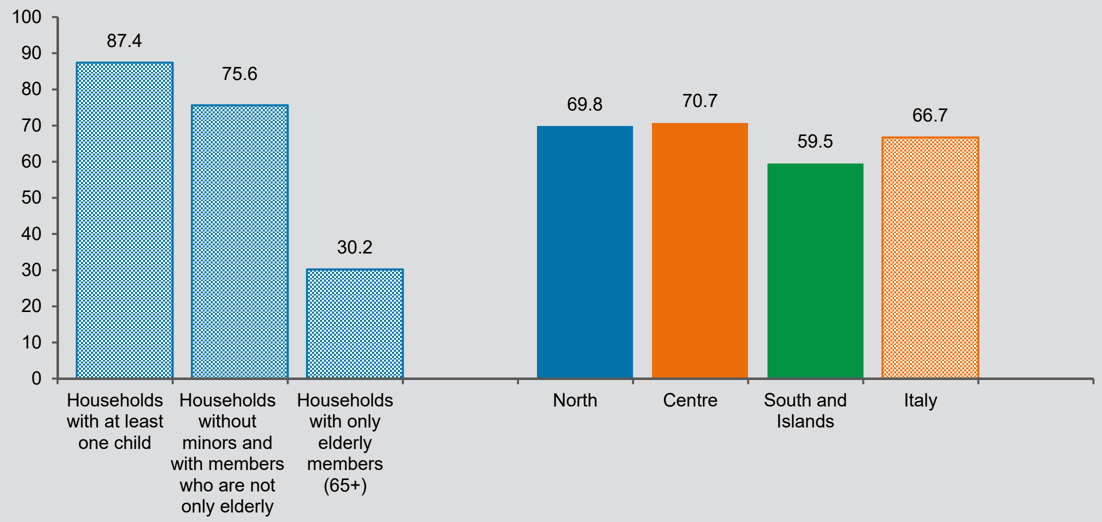
One-third of households do not have computers and Internet access at home

The use of Internet also requires the availability by the household of an adequate connection and suitable tools (devices).
In recent years, mobile phones and smartphones have increasingly become the driving factors in accessing the web, and in many cases, they represent the only way, particularly among those groups that show a lower use of the Internet. More than half of people with low educational qualifications and a large share of residents in the South and Islands access the Internet exclusively through smartphones[5].

5 The percentages, estimated by the Istat "Aspects of Daily Life" survey for the year 2019, are precisely 51.7% for people with low educational qualifications and 40.7% for residents in the South and Islands.

Although smartphones can facilitate a wide diffusion of Internet access and an easy carrying out of some activities, on the other hand it do not guarantee the acquisition of more complex digital skills. Data on the availability in the family of at least one computer (including tablets) and Internet connection allow us to monitor situations of exclusion or difficulty in the full access to the opportunities offered by digital technology.
In 2020, in Italy, 66.7% of households have Internet access from home and at least one computer (Figure 2). Compared to 2019, there is an increase by 1.6 percentage points, all due to the increase in Internet access from home (which rise from 76.1% to 79.6%), while there are no significant changes in the households' availability of a PC.
Differences among regions continue to be high, with a general advantage for those in central and northern Italy. Trentino-Alto Adige and Friuli-Venezia Giulia are the regions with the highest percentage of households equipped with technology, at 74%.

Figure 2. Households with Internet connection and at least one personal computer by family type, by geographic area. Year 2020 (a)**. Percentage values**



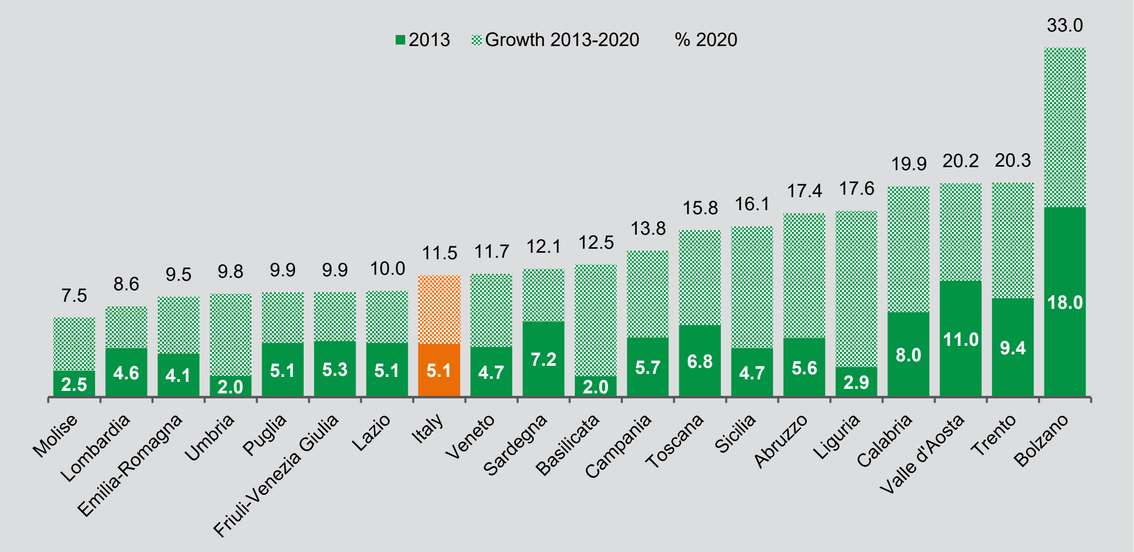
Source: Istat, Survey on the use of ICT in the Households and by individuals
(a) 2020 data are provisional.

The level of education of the family members has a very strong impact on the endowment and use of ICT, so as the presence of at least one child in the family. In fact, almost all of the more educated families (in which at least one member has a university degree) have a connection and at least one PC (92.8%), a percentage that drops to 31.7% when the highest qualification in the family is the lower secondary education diploma. A similar trend appears comparing families with at least one child (87.4%) to those composed by elderly people only (30.2%). These gaps remain stable compared to 2019.

Just over one in ten Italian businesses sell via the web to end consumers

E-commerce is an opportunity for companies to have a greater access to the national, European and – potentially – global market. At the same time, it can affect directly the well-being of individuals, by producing greater access to goods and services, expanding supply and price competition, leading to new ways in time use and new chances of life balance[6]. The trend is growing, but levels remain low, held back by some characteristics of the Italian production system, such as the enterprises size and sector of activity.
In 2020, the share of Italian companies 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 intermediaries[7] was 11.5%, more than doubled compared to 2013 (5.1%). The regional distribution shows wide distances among regions, from 7.5% of Molise businesses to 33% of those in the autonomous province of Bolzano, with the northern and the southern regions equally represented in both the top and bottom groups of the distribution (Figure 3). In general, the average for southern Italy (13.8%) exceeds that of northern Italy (10.6%) by more than 3 percentage points. In particular, the highest levels are in Calabria, Abruzzo and Sicilia (19.9%, 17.4% and 16.1% respectively).

Figure 3. Enterprises with 10 or more persons employed that during the previous year sold via web to end customers (B2C) by region. Years 2013 and 2020. Percentage values



Source: Istat, Survey on information and communication technology in enterprises

Moreover, just some regions of southern Italy – Basilicata, Sicilia, Abruzzo and Calabria – record the highest growth between 2013 and 2020 (around 11 percentage points). On the other hand, in Piemonte, Lombardia and Emilia-Romagna, the share of companies selling via web B2C does not reach 10% of the total. This can also be explained because in these regions there is a greater share of firms operating in sectors of economic activity less

6 In 2019 over half of Internet users aged 14 and older (57%) reported making online purchases in the year prior to the interview. See the link to the 2019 Aspects of Daily Life survey results for more details: https://www.istat.it/it/archivio/236920.

7 The indicator does not consider sales made via the web to other companies or the public administration; with whose additional contribution it reaches 13.7% in 2020 (it was 6.1% in 2013).

oriented to B2C sale. In absolute terms, however, companies in the North, led by those in Lombardia, Veneto and Emilia-Romagna, contribute to the Italian average with more than half of the total number of companies selling via web B2C in both 2020 and 2013.

The indicator, by its nature, varies greatly by sector of economic activity: in the non-financial services sector it reaches 16.3%, in manufacturing it drops to 6.6%. Over the years, the former sector has grown more than the latter (in 2013 they were 8.2% and 2.4%, respectively). As expected, the highest levels of the indicator are in those sectors which are most oriented towards sales to end consumers: hospitality (from 54.9% in 2013 to 90.4% in 2020), publishing (from 36.9% to 60.7%), travel agencies (from 21% to 39.6%) and retail (from 8.4% to 21.2%). Among manufacturing companies, stand out those active in food (16.1% in 2020) and wood products (13.9%).

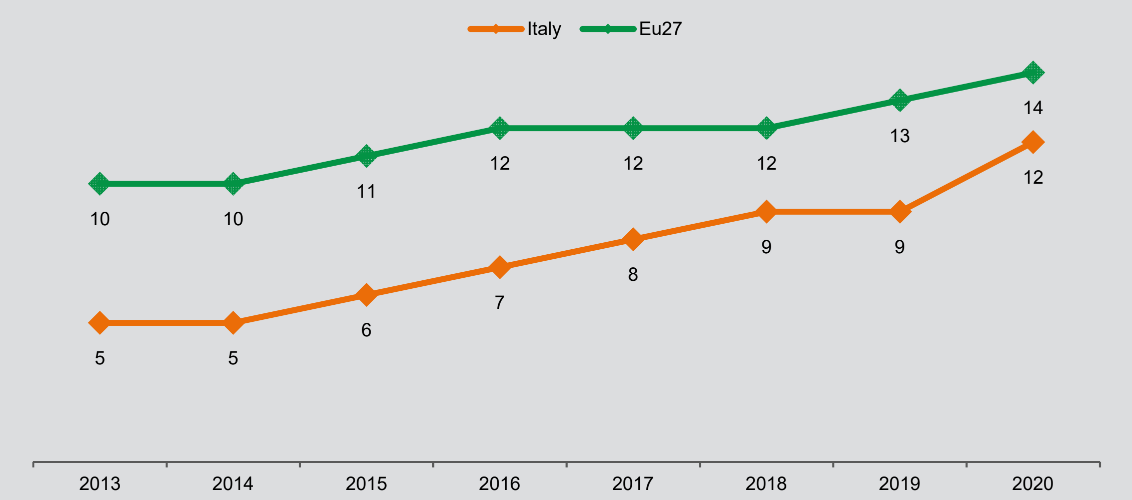
Enterprise size also affects the share of firms selling via web B2C: the propensity to use this sales channel is almost double among large firms (20.4%) compared to small firms (11.3%).

The B2C web sales are small in the European Union too, involving on average just 14% of businesses in 2020[8] (Figure 4). Italy remains at the bottom of the European ranking, even if the starting gap from the Eu27 average is more than halved. Data also suggest that the acceleration observed in the last year will continue. In fact, the survey conducted in May 2020 by Istat on the situation and prospects of companies during the pandemic emergency[9] revealed that about 16% of companies with at least 10 employees, in order to respond to the COVID-19 emergency, had already adopted (or were considering adopting) changes or expansions of sales channels or supply/delivery methods, with the transition to online services, e-commerce, and multi-channel distribution models. The second edition of the survey, carried out in November 2020, shows that the expansion of ultra-wideband connectivity, already widespread in the pre-COVID period, produced a significant increase both in quality and availability, setting the preconditions for a true explosion of digital communication services with the public, primarily potential customers. Businesses – even the smallest ones – also indicate a sharp reduction, in the 2019-2020 comparison, in the percentage of revenue generated through traditional non-digital channels against an increase in the share of revenue generated by digital channels. When comparing the preliminary data for 2020 with the forecast data for 2021, the process of substitution between non-digital and digital commercial channels continues, albeit with an expected slowdown in all size classes: a perspective that does not yet allow for an understanding of whether the changes underway are temporary or structural.

8 For further information on e-commerce at EU level, see the following link https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics.

9 For further information, see the following link https://www.istat.it/it/archivio/244378. The results of the second edition of the COVID-19 Rapid Survey on Business Situation and Prospects in Emergency Health Care, and additional insights, are available at the link https://www.istat.it/it/archivio/252396.

Figure 4. Enterprises with 10 or more persons employed that during the previous year sold via web to end customers (B2C) in Italy and in European Union. Years 2013-2020. Percentage values



Source: Eurostat, Survey on information and communication technology in enterprises

Municipal provision of fully online services for families is limited

Among ICT applications, those linked to e-government represent an opportunity to increase the efficiency of the Public Administration and to improve its relationships with citizens. One of the most important results for the well-being of individuals and families is certainly the possibility of completing online the entire procedure to access services, according to the user-centricity principle recalled in European and national guidelines for ICT development in Public Administration[10]. Despite the advances made over the years, the spread of municipal services that are managed entirely online is still low, especially in smaller Municipalities, and mainly limited to simpler procedures.

In 2018, only one Italian Municipality out of four managed fully online at least one service for families[11]; raising the threshold to at least two services the share drops to 10% and falls to 5% for at least three services. Considering the broader group of Municipalities managing fully online at least one fully online service, the share has more than doubled since 2012 (it was 9.9%), thanks in part to the significant acceleration in the last period (+9.4 percentage points between 2015 and 2018)[12]. The regional distribution is varied (Figure 5). In 2018, as in 2012, the highest shares are in Emilia-Romagna (45.6%), Veneto (43.4%), Lombardia (41.3%) and Toscana (39.1%).

These regions also recorded the greater increases over 2012 (by more than 20 percentage points). The size of the Municipality and the procedures complexity are further significant elements of differentiation: as a general trend, larger Municipalities, seem more aware of the opportunity represented by digitization, also in view of the greater number of files to

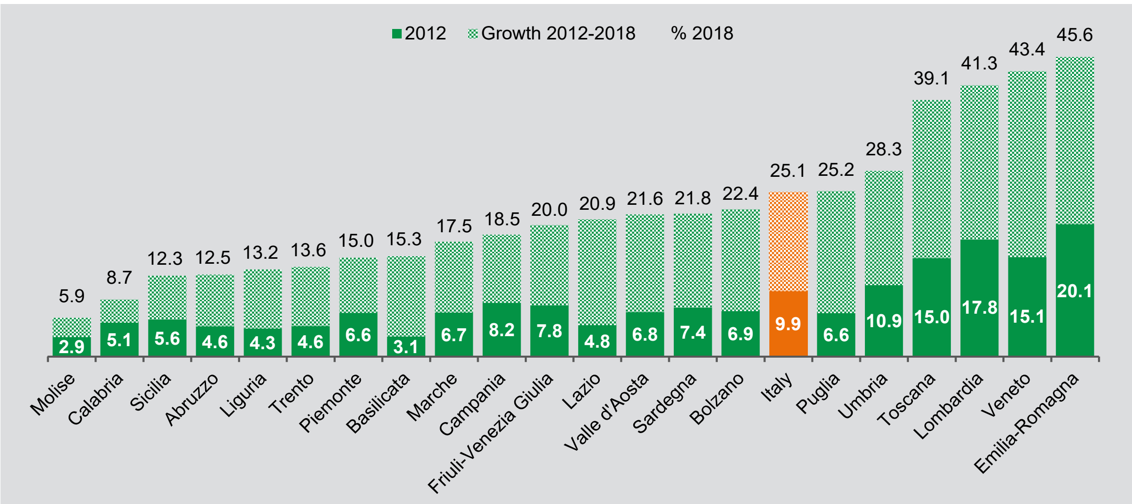
10 See, for example, the Three-year Plan for Information Technology in Public Administration 2020-20.

11 To calculate the indicator, a subset of 11 services is considered that a) are exclusively or prevalently addressed to families; b) are connected to the fundamental functions of the Municipalities; c) can theoretically be provided by all the Municipalities.

12 The survey on information and communication technologies in public administrations takes place every three years. The first edition is referred to the year 2012.

be processed, while the availability of fully online services decreases as their managing complexity increases, especially in smaller Municipalities. In 2018, 77.1% of Municipalities with at least 60 thousand inhabitants manage fully online one or more services; the share falls to 16.5% for small Municipalities (those up to 5 thousand inhabitants). Over time, this difference has increased simultaneously to the general growth in supply: in 2012, the same shares were 47.6% and 6.9% respectively. Small Municipalities, therefore, have found it more difficult to make the technological leap towards a greater offer of digital services. Policies already launched in Italy a few years ago[13] and those adopted more recently[14] could support them in the transition process.
The most common fully online service is, by far, that of catalogue consultation and library lending[15] which, in 2018, concerns 10% of Italian Municipalities, and is quite widespread even in small Municipalities (6.7%). More complex services, for example those whose procedures include online payment, such as payment of fines and school refectory are managed fully online just in a number of larger Municipalities (52% of Municipalities with at least 10 thousand inhabitants). Registry services, which require an upstream commitment to computerizing citizens data, are provided fully online mainly by Municipalities with over 60 thousand inhabitants (44.1%; it was 23.7% in 2012). Only in these Municipalities, fully online services related to property taxes and waste disposal taxes (IMU and Ta.Ri.) reach significant shares (18.9% and 16.2%, respectively).

Figure 5. Municipalities that manage online at least one service for families or individuals at a level that allows the online start and conclusion of the entire procedure by region. Years 2012 and 2018. Percentage values



Source: Istat, Survey on information and communication technology in public administrations

13 Article 17 of the Digital Administration Code obliges Public Administrations (PAs) to identify an office responsible for the digital transition that is in charge of the related activities and organizational processes necessary for the implementation of a digital administration and service delivery. The subsequent Circular No. 3 of October 1, 2018 of the Minister of PA urged the appointment of these figures.

14 In particular, the simplification measures for the support and diffusion of digital administration adopted with Law 120/2020, which envisage the launch by the end of February 2021 of the digital transformation required to make its services available on the new public services application (App IO). For further details, see the Italian Minister for Technological Innovation and Digitalization guidelines.

15 Online library services, beginning in the mid-1980s, have gradually expanded thanks to the OPAC - *On-line public access catalogue*.

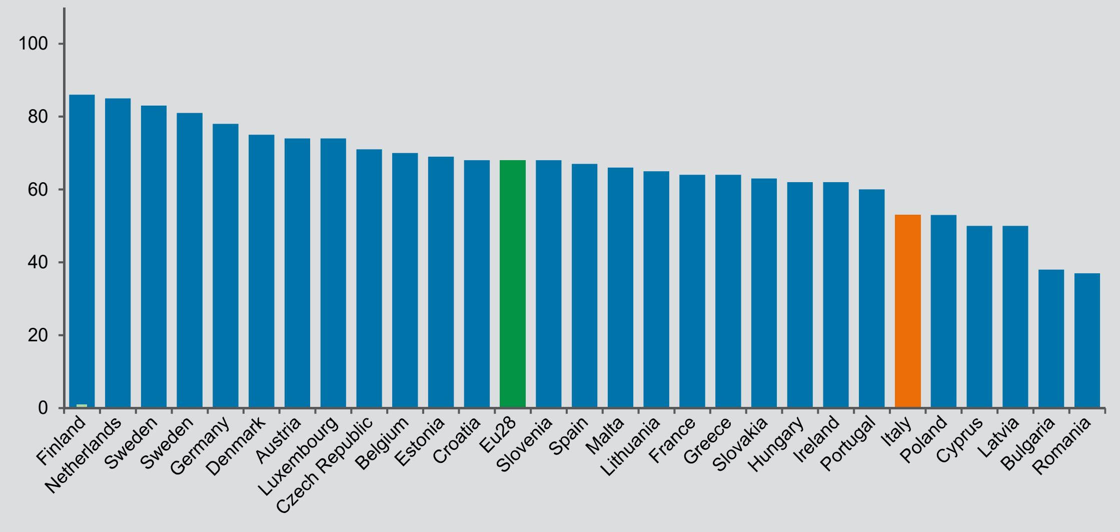
Levels of access by users are different too. Among those Municipalities that have implemented fully online management of services, no more than 10% of the total procedures are completed online. The share rises to 20% in the case of registry certificates, but the highest rates are reached by school refectory services: in 2018 more than half of the Municipalities that have activated online management digitalized over 90% of total procedures.

Only half of the employed have at least basic digital skills. Inequalities by education and occupational status are strong

The adoption of digital technologies and new organizational models by companies and public administrations, leads generally to a revision of the system of competencies[16]. In fact, over the years, digital skills have changed at the speed of the evolution of ICT, and the ability to develop a technical mentality capable of operating in a constantly changing digital ecosystem became increasingly important. The technical knowledge, therefore, is considered a transversal social knowledge, and for this reason it is important to monitor the digital skills of the employed by referring to the overall skills acquired in the different areas of everyday life.

In 2019, in Italy just over half of employed people aged 25-64 have basic or high digital skills (53%), 15 percentage points below the European average (68%) (Figure 6). This confirms that in our Country there is still a first-level digital divide related to Internet access. In fact, while almost all employed people aged 25-64 living in northern European countries access the Internet on a regular basis, in Italy, for the same population group, saturation levels are far to be reached (the share of employed who regularly use the Internet is 85%).

Figure 6. Employed people (aged 20-64) who have at least basic digital competences in Italy and in European countries. Year 2019. Percentage values

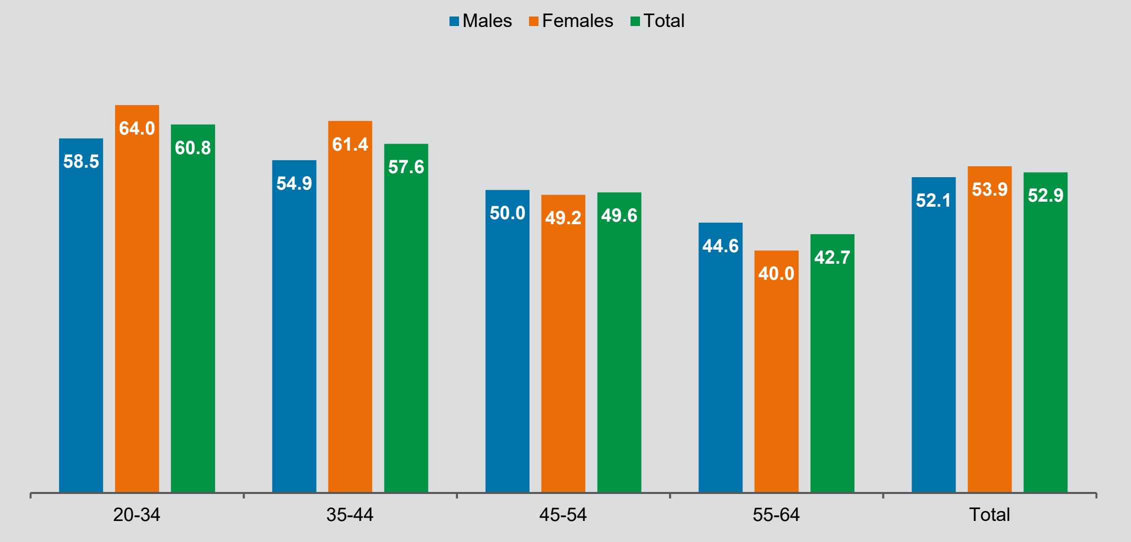


Source: Eurostat, Survey on the use of ICT in the Households and by individuals

16 The European Parliament and the European Council identify digital competencies as one of the eight key competencies for lifelong learning, describing them as the ability to use information society technologies for work, leisure and communication, with familiarity and critical thinking (Recommendation 2006/962/EC of the European Parliament and of the Council).

The indicator chosen to monitor the Italian situation considers the employed people aged 20-64, a broader aggregate than the one used at European level. The average in 2019 is 59.9%, with a great variability according to socio-demographic and territorial features (Figure 7).
60.8% of the employed in the 20-34 age group have at least basic digital skills, while among the older ones (55-64 years) the figure drops to 42.7%. There is no relevant gender gap, although it should be noted that among the young and up to 44 years of age there is a female advantage by over 5 percentage points, which changes in favour of men at later ages. This female advantage is also explained by the differences in the professional structure, given that female employment is concentrated in some higher-skilled professions, even if they are far from managerial areas.
The education level is another factor explaining the differences: 82.3% of those employed with a high educational qualification have at least basic digital skills compared to 55.9% of those with an average qualification and to 21.8% of those with a low educational qualification.

Figure 7. Employed people (aged 20-64) who have at least basic digital competencies by gender and age class. Year 2019. Percentage values



Source: Eurostat, Survey on the use of ICT in the Households and by individuals

Differences among regions are strong. The backwardness of southern Italy (45.8%) is particularly evident in a gap of almost 10 percentage points with respect to northern and central Italy, which are, on the other hand, not far apart (56.4% and 53.3%, respectively).
An analysis of the four skills areas[17] (information, communication, problem solving and software) considered to calculate the synthetic indicator on digital skills, shows that those employed in more qualified positions have a clear advantage in all four domains. In particular, the widest gaps refer to the software skills (that are closely related to the work activity) with a ratio of 1 to 3 between blue-collar workers (19%) and the group of managers, entrepreneurs and freelance professionals, office workers, executives and managers (60%).

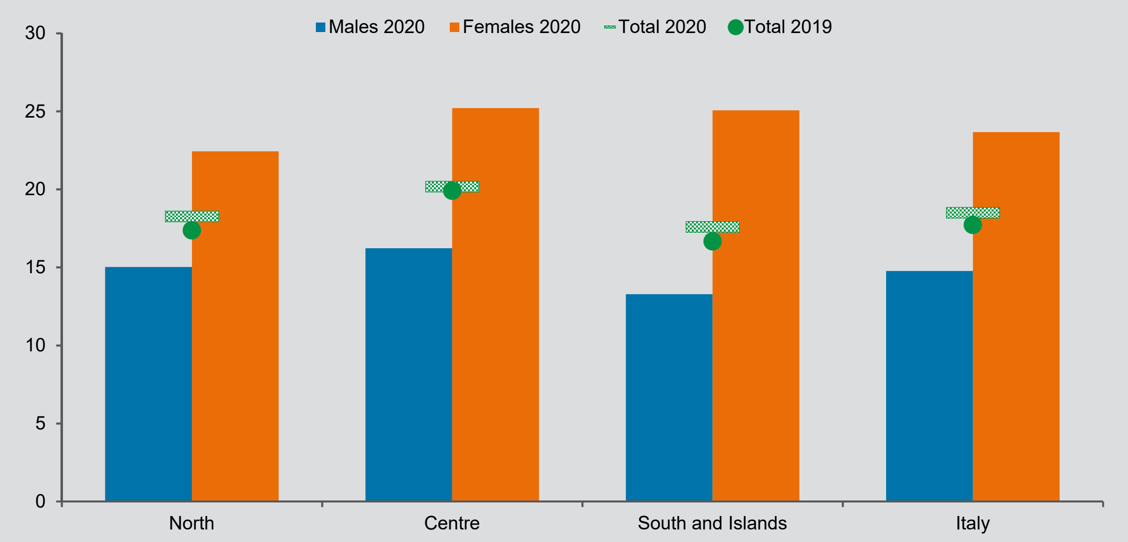
17 The areas and activities are: Information skills – searching the Internet for data, documents, etc.; Communication skills – interacting via the Internet, use of social media; Problem solving skills – solving technical problems, updating one's own and others' skills; Software skills for content manipulation – creating content through text, image and video processing, integrating and reworking already published content, producing creative forms of expression, being aware of and applying intellectual property rights.

Wide gaps, with a ratio of almost 2 to 1 between the employed in more qualified positions and blue collar workers, are also recorded for problem solving (63% compared to 32% of blue collar workers) and information (73% compared to 40% of blue collar workers), which are more associated to daily life activities.

Knowledge workers on the rise and less vulnerable in the COVID-19 downturn

The share of knowledge workers in the total workforce, i.e. the share of those in scientific and technological professions with a university degree, has been rising steadily in recent years. The tendency appears more marked in the second quarter of 2020, when the level of the indicator reaches 18.5% (+0.8 percentage points over the same quarter of 2019).
The last variation results from a slight growth of the employed in this segment of the labour market, but above all it reflects the greater resilience of the most qualified occupations during the negative conjuncture produced by the pandemic emergency, with a contraction of general employment levels. In fact, between the second quarter of 2019 and 2020, the net loss of employed people aged 15 years and over is 841 thousand (-3.6%), while knowledge workers have grown by more than 27 thousand (+0.7%). The impact of knowledge employment is structurally higher for women than men. In the second quarter of 2020, female knowledge workers come to represent 23.7 percent of total female employment, gaining more than 1 percentage point over the same period in 2019, and increasing their advantage over men. The gender gap is close to 9 percentage points (in the second quarter of 2019 it was 8.5 percentage points; 8.4 percentage points on an annual average). This gain is all due to the more severe penalty suffered by women in terms of overall employment. In fact, the total amount of employed women aged 15 and older declined by 4.7 percent between 2019 and 2020 (second quarter, Q2), more than offsetting the simultaneous contraction suffered by the higher-skilled women employed as well (-0.4 percent).
The share of female knowledge workers reaches the maximum levels in the 25-34 and 35-44 age groups: in Q2 2020 it rises to 31.9% and 28.7% respectively, with significant gains compared to Q2 2019.
Spatial differences are wide. The highest levels are in the Centre (20.2%), the lowest in the South and Islands (17.6%), where the percentage is very low for males (13.3%) while the females' rate (25.1%) is in line with the value in the Centre and exceeds that of the North (Figure 8). Compared to Q2 2019, the distance between the Centre and the South has narrowed by 0.7 percentage points as a result of the recomposition generated by the contraction of overall employment (-5.3%), which in the South produces a gain in the value of the indicator of almost 1 percentage point, against the substantial stability of skilled employment.
Despite the growth trends, also described by the annual data, Italy's position remains behind compared to European countries. Considering the average levels for the year 2019, the gap between Italy (17.6%) and the Eu28 average (23.9%) grows by 0.3 percentage points compared to 2018.

Figure 8. Employees with tertiary education (ISCED 6-7-8) in scientific-technological occupations (ISCO 2-3) by gender and geographic area. Years 2019 and 2020 Q2. Values per 100 employees with the same characteristics



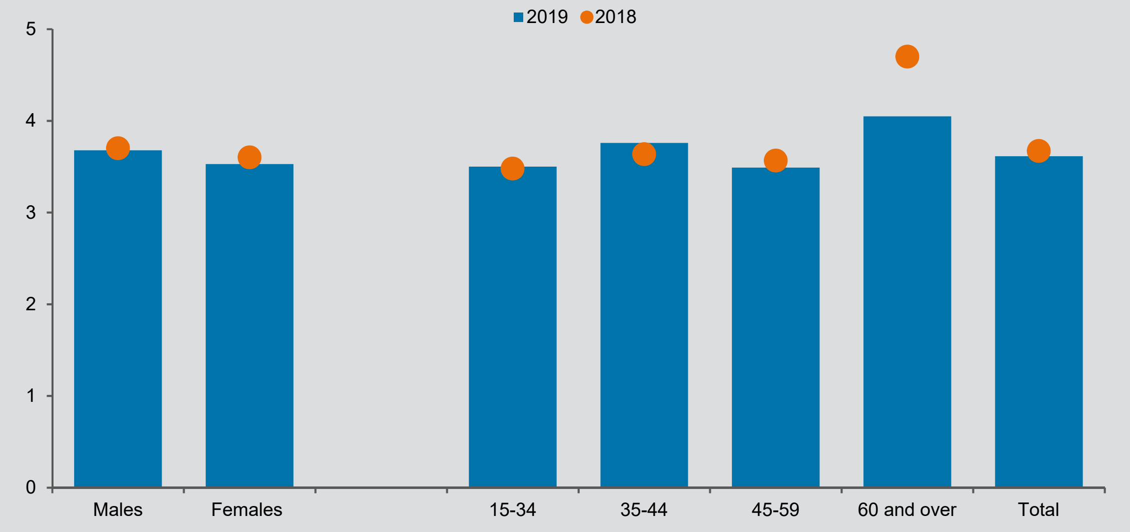
Source: Istat, Labour force survey

Cultural and creative employment is struggling to grow, but Italy is in line with the EU average

In 2019, employed in cultural and creative sectors or professions in Italy are about 844 thousand; the weight of cultural and creative employment on the total employment (3.6%) remains stable compared to 2018. More than half (54%) are concentrated in the North, 20% are in the South. Differences among regions are wider when considering the weight of the cultural and creative sector on overall employment. The regions of central Italy reach the highest levels (4.5% in average), and in particular in Lazio and Toscana (5.1% and 4.4%, respectively), while in the southern regions they are always below the Italian average, reaching their lowest levels in Calabria and Sicilia (2.3% and 2.4%, respectively).
The difference between men (3.7%) and women (3.5%) remains small despite the reduction in the number of cultural and creative employees registered over the last year (down 3.7 thousand units). Looking at the age groups, a moderate variability appears. The 60+ age group continues to stand out from the others for higher levels (4%), particularly among men (4.3%) (Figure 9).
In the European context, Italy in 2019 remains just below the average of the 27 countries[18] (3.7%), exactly in line with Spain and slightly higher than France (3.5%). Germany is at 4%.

18 Following the United Kingdom's withdrawal from the European Union, Eurostat calculated the EU27 aggregate for the entire time series. The revised data are available at https://ec.europa.eu/eurostat/web/culture/data/database.

Figure 9. Employees in cultural and creative professions or sectors of activity by gender and age class. Years 2018 and 2019. Values per 100 employees with the same characteristics



Source: Istat, Labour force survey

The migration of young Italian graduates continues to penalize the South of Italy

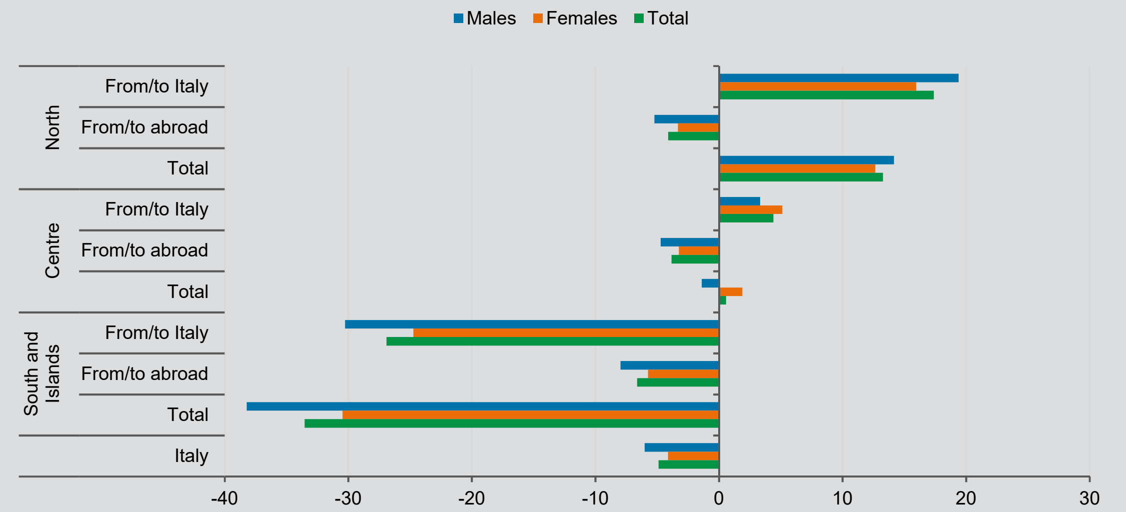
The capacity to attract and/or retain younger and more educated human resources is a further element to evaluate the processes that underlie the diffusion and application of knowledge. The indicator used to measure this aspect considers the net gain (or loss) due to the migration of young residents aged 25-39 with a university degree, and is limited to Italian citizens, since for foreign citizens the population register does not yet provide information of adequate quality[19].

The mobility of young Italian graduates follows the trend already observed in recent years[20]: during 2019 about 21 thousand young Italian graduates have established their residence abroad Italy and more than 8 thousand have transferred it in one Italian Municipality coming from a foreign country. The annual foreign migration-balance is negative and amounts to a net loss of 12,637 units. The migratory rate (calculated in relation to Italian residents with university degree of the same age) is -4.9 per 1,000, and is higher for men (-6) than for women (-4.1). Foreign migrations flows of young skilled residents are greater in southern Italy, where the rate is -6.6 per 1,000 and rises to -8 per 1,000 for men (Figure 10).

19 In particular, for the educational qualification variable. Improvements are being tested through integration of the master data source with information provided by the Integrated Registry System, which will also be able to make use of the results of the Permanent Population Census to be released in 2021.

20 In 2019, data on transfers of residence are affected by the new methods of detecting registry movement that are gradually being implemented through the national registry of the resident population - ANPR (art.62 Legislative Decree no. 82/2005). During 2019, the takeover of many Municipalities in ANPR has made it possible to simplify and speed up the exchange of information between registry offices. The increased timeliness is reflected in an increase in registrations of internal movements made during the year (+9% compared to 2018 for internal movements). Therefore, the 2019 results are comparable in sign but not in value to the historical series already disseminated for previous years. In addition, it should be noted that the indicator is disseminated as anticipatory data, as the resident population by age, citizenship and educational qualification surveyed at the population census is being validated.

Figure 10. Net migration rate of Italian graduates (25-39 years) by origin/destination, gender and geographic area. Year 2019 (a)**. Values per 1,000 residents with the same characteristics**



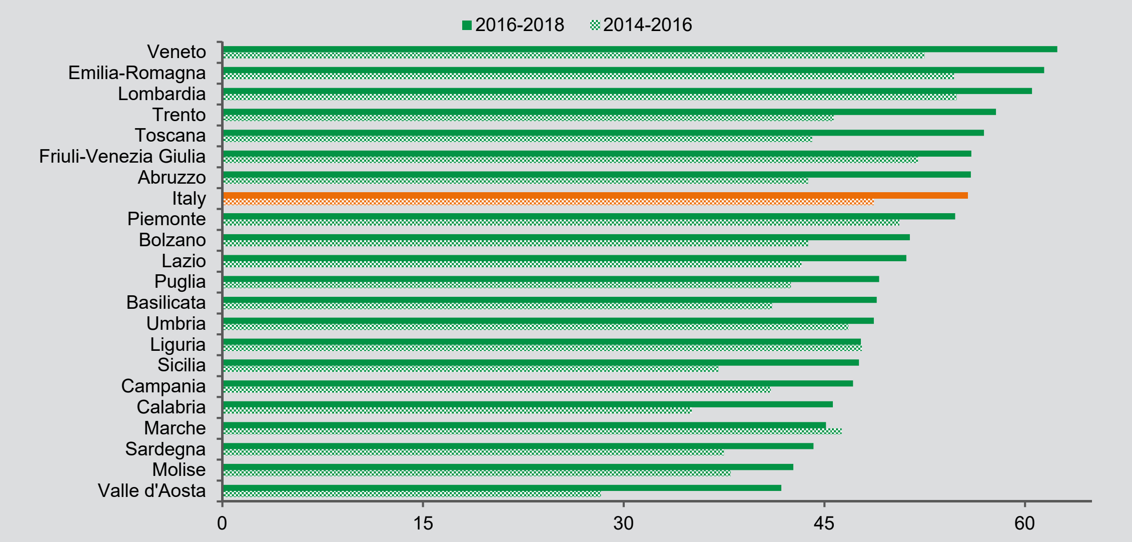
Source: Istat, Registrations and cancellations from the population registry for residence transfer and Base Register of Individuals
(a) Advance data.

The foreign balance is also negative in the North (-4.1) and in the Centre (-3.8), where, however, it is fully compensated by internal migrations, which, on the other hand, accentuate the penalization of the South and Islands, the only geographic area of Italy that maintains a negative total balance (-33.5 per 1,000). The overall balance is essentially break-even in the Centre (+0.6 per 1,000) and largely positive for the North (+13.3 per 1,000), which confirms to be the most attractive area of the country, having acquired during 2019 about 16 thousand more young Italian graduates by transfer of residence.

Growing propensity for innovation in small businesses and in southern Italy

In 2016-2018 in Italy, 55.7% of industrial and service companies with at least 10 employees carried out activities aimed at introducing product, process, organizational or marketing innovations (Figure 11). At a national level, the indicator increased by 7 percentage points compared with the previous three-year period, with the most significant gains in central and southern Italy (+7.8 percentage points and +7.9 percentage points, respectively). As a result, the gap between the North and the South narrows, falling from 12.8 percentage points in 2014-2016 to 11.3 percentage points in the latest three-year period. Companies in the North continue to show the highest innovation propensity for (59.4%), while in the South and Islands the indicator value is 48.1%. The three regions with the absolute highest levels are Veneto, Lombardia and Emilia-Romagna, which exceed 60%, while Valle d'Aosta, Molise and Sardegna do not reach 45%. The improvement concerns all regions, with varying degrees of intensity, with the only exception of Marche, that register a significant contraction (-1.2 percentage points; 45.1%) and falls back several positions from the previous three-year period. The most significant progresses are in Toscana (+12.8 percentage points; 56.9%) and Abruzzo (+12.2 percentage points; 56%), the only two regions in central and southern Italy that – for the first time – exceeded the national average.

Figure 11. Enterprises with 10 or more persons employed with innovative activities by region. Years 2014-2016 and 2016-2018. Values per 100 enterprises with at least 10 employees



Source: Istat, Cis (Community Innovation Survey)

The differences among regions outlined by the indicator also reflect the sectoral and dimensional features of the local economies. In fact, the innovation rate grows as company size increases and it varies across the sectors of economic activity: it reaches its absolute minimum in construction (34.9%), while in industry it is higher (65.7%), reaching 90.3% in large industrial enterprises. Regardless of the sectors of economic activity, in 2016-2018 the share of innovative companies varies between 53.3% of the 10-49 employees' class and 81% of the 250+ employees' class. However, there is a reduction in these differences as well, thanks to the lively dynamics shown by small innovative companies, that in 2016-2018 express an above-average growth (+7.6 percentage points), compared to the more moderate trend of medium-sized companies (+3.1 percentage points) and to the substantial stability recorded for large companies. The greatest advances are made by small businesses in industry (+9.4 percentage points; 62.6%) and services (+7 percentage points; 49.5%).

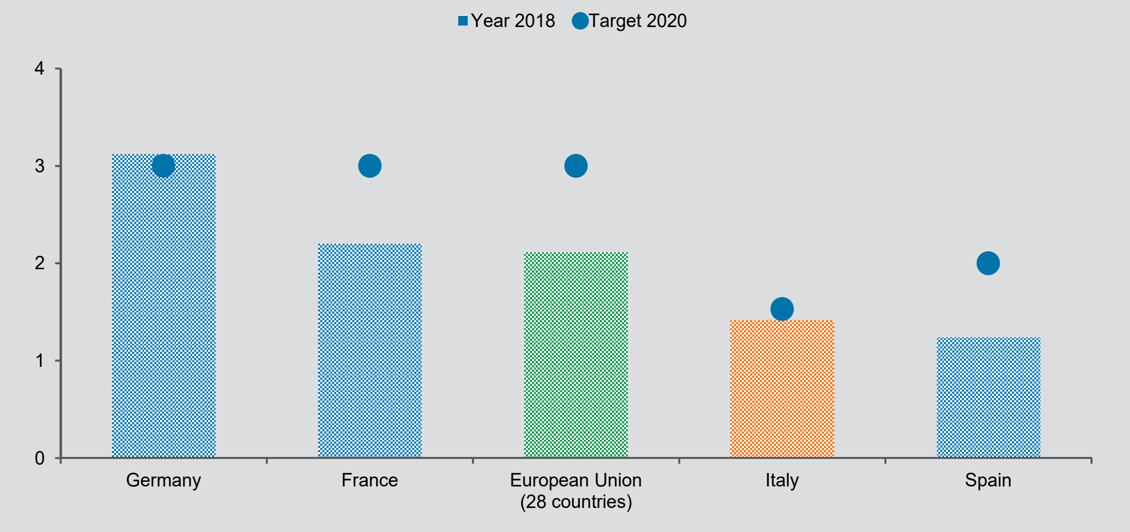
Weak growth in investments in intangible capital and R&D. Italy remains far from Europe

According to national accounts estimates, in 2019 in Italy investment in intellectual property products (IPR), which includes research and development (R&D), software, mineral exploration and evaluation, and originals of artistic, literary or entertainment works, amounted to 55 billion euros[21].Compared to the previous year, R&D investment remains at a similar share both to total investment (17.1%) and to GDP (3.1%). Set to 100 the 2007 value (42.8 billion euros), the index in 2019 reaches 128.6 and gains 1.3 points compared to 2018 (127.3). In the last year, therefore, the growth of investment in IPR has a new slowdown (between 2017 and 2018 the same index gained 3.6 points) and Italy moves further away from both the average of the 28 European countries and the average of the

21 Chained values with base year 2015.

19 countries of the Euro Area, where the dynamics were decidedly livelier. In the Union, investment in IPR grew by 13.2% compared to 2018 (+1.1% in Italy), and in 2019 is 21.6% of total investment and 4.6% of GDP. In the Eurozone, the same ratios are worth 22.4% and 4.9%, respectively, against a growth in IPR investment of 16.4%.
The 2018 results of the research and development (R&D) survey confirm the Italian weakness in investments in intangible capital, also highlighted by the European comparison.
The expenditure incurred in 2018 by the Italian Public Administration, Universities, Businesses and Non-Profit Institutions to carry out research and development activities with their own personnel and with their own equipment (so-called intra muros R&D activities) amounts to a total of 25.2 billion current euros, 1.4 more than in 2017. Compared to 2017, research intensity, measured as the percentage ratio of R&D expenditure to GDP, is stable at 1.42%, (+0.05 percentage points). Regional heterogeneity remains high, with Piemonte and Emilia-Romagna placed above 2%, and close to the European average, and Calabria and Valle d'Aosta lagging around 0.5% of regional GDP.
Instead, the increases recorded in the South are even more modest, and thus southern regions accentuate their distance from the rest of the country. The average of the southern area in 2018 stops at 0.93% of GDP, 0.64 percentage points below the levels of the North and Centre.
Regional differences also reflect the different weight of institutional sectors of expenditure. Considering the destination of resources, the growth of R&D spending between 2017 and 2018 was strongly concentrated on private companies, which recorded an increase of 1.09 billion euros compared to 2017 (76.0% of the total increase). In 2018, total R&D spending by businesses accounted for 63.1% of the total, compared to 22.8% by public and private universities and 12.5% by public institutions. However, R&D spending by public institutions increased in the last year (+0.2 billion, +7.1%) more than that of universities (+0.14 billion euros, +2.6%), while the nonprofit sector contracted. For almost two-thirds, the highest R&D spending in 2018 was concentrated in the North (+0.92 billion euros; 64% of the total increase), and for more than half in the private business sector in the same area of the country (+0.75 billion euros). The share of the latter in total R&D expenditure is 46.1% in 2018.
Research intensity in Italy is still well below the average of the 28 EU countries (2.11%) and far from the "Europe 2020" target set at national level (1.53%), which, however, in 2018 was reached by the North and the Centre. The national position in the European context has not changed substantially (Figure 12): the distances from Germany – which has more than double levels (3.12%) – and France (2.2%) remain large, and the advantage over Spain (1.24%) is contained. If looking at the labour input, Italy's position is less disadvantaged. The share of R&D employment on the total (estimated in full-time equivalent units) is 1.53% in 2018 against the EU28 average of 1.48%, and the distances from Germany (1.74%) and France (1.70%) are smaller.

Figure 12. Intramural R&D expenditure (GERD) in Italy and in other European countries and Europe 2020 target. Year 2018. Percentage of GDP



Source: Eurostat

Indicators

1. **R&D intensity:** Percentage of expenditure for intra-mural 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 5-6-7-8) 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 proprety procucts intended to be used for more than one year. Chained values, reference year 2015 (millions of euro), Indexed 2007 = 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 year-olds):** 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 year-olds.
   Source: Istat, Registrations and cancellations from the population registry for residence transfer and Base Register of Individuals.
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 online at least one service for families or individuals at a level that allows the electronic start and conclusion of the entire process (including any online 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).
    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, and 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 AND GEOGRAPHIC AREAS	R&D intensity (a) 2018	Patent propensity (b) 2016	Impact of knowledge workers on employment (c) 2020-22	Innovation rate of the national productive system (d) 2018	Intellectual property products (e) 2019	Cultural employment (c) 2019
Piemonte	2.17	112.0	16.9	54.8	....	3.8
Valle d'Aosta/Vallée d'Aoste	0.49	39.3	15.2	41.8	....	4.0
Liguria	1.36	61.4	21.4	47.7	....	3.4
Lombardia	1.32	132.5	18.7	60.5	....	4.1
Trentino-Alto Adige/Südtirol	1.15	107.8	16.9	54.1	....	3.7
Bolzano/Bozen	*0.83*	*84.5*	*14.0*	*51.4*	....	*3.1*
Trento	*1.54*	*130.4*	*20.0*	*57.8*	....	*4.3*
Veneto	1.39	122.3	16.2	62.4	....	3.6
Friuli-Venezia Giulia	1.65	148.5	18.2	56.0	....	3.6
Emilia-Romagna	2.03	196.1	20.3	61.4	....	3.2
Toscana	1.55	98.9	17.0	56.9	....	4.4
Umbria	1.01	42.8	17.3	48.7	....	3.3
Marche	1.09	79.1	16.9	45.1	....	3.2
Lazio	1.74	33.9	23.6	51.1	....	5.1
Abruzzo	0.94	37.6	18.3	56.0	....	3.2
Molise	1.28	7.1	16.3	42.7	....	3.1
Campania	1.29	14.1	18.4	47.1	....	2.8
Puglia	0.79	12.7	16.6	49.1	....	2.5
Basilicata	0.61	9.8	15.4	48.9	....	2.5
Calabria	0.54	8.6	17.6	45.6	....	2.3
Sicilia	0.83	8.2	17.3	47.6	....	2.4
Sardegna	0.82	7.7	18.7	44.2	....	2.9
North	1.57	132.9	18.3	59.4	....	3.7
Centre	1.57	60.5	20.2	52.2	....	4.5
South and Islands	0.93	12.6	17.6	48.1	....	2.6
Italy	**1.42**	**77.5**	**18.5**	**55.7**	**128.6**	**3.6**

(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, reference year 2015 (million Euro), index-linked 2007=100.

Brain circulation (italians, 25-39 year-olds) (f) 2019 (*)	Regular Internet users (g) 2020 (**)	Availability of at least one computer and Internet connection in the household (h) 2020 (**)	Municipalities with online services for families (i) 2018	Enterprises with web sales to end customers (c) 2020	Employed persons with basic or above basic overall digital skills (20-64 years) (l) 2019
....	70.3	65.7	15.0	7.9	54.4
....	68.7	67.4	21.6	20.2	58.1
....	69.4	64.4	13.2	17.6	56.0
....	72.4	70.7	41.3	8.6	58.5
....	75.6	74.1	17.1	27.8	57.4
....	*78.2*	*73.5*	*22.4*	*33.0*	*56.5*
....	*73.0*	*74.7*	*13.6*	*20.3*	*58.3*
....	72.5	70.5	43.4	11.7	53.6
....	71.1	74.0	20.0	9.9	58.3
....	74.5	71.1	45.6	9.5	56.0
....	72.1	69.2	39.1	15.8	55.3
....	69.7	63.6	28.3	9.8	52.1
....	66.8	67.4	17.5	7.8	50.5
....	73.7	73.4	20.9	10.0	53.0
....	66.1	65.2	12.5	17.4	50.6
....	63.6	61.9	5.9	7.5	51.3
....	64.3	62.0	18.5	13.8	45.1
....	61.9	59.8	25.2	9.9	44.7
....	60.7	53.3	15.3	12.5	44.4
....	61.0	53.4	8.7	19.9	44.8
....	63.0	55.4	12.3	16.1	44.5
....	66.9	66.5	21.8	12.1	50.3
13.3	72.3	69.8	30.4	10.6	56.4
0.6	72.0	70.7	25.9	11.8	53.3
-33.5	63.4	59.5	15.6	13.8	45.8
-4.9	**69.2**	**66.7**	**25.1**	**11.5**	**52.9**

(f) Per 1,000 inhabitants aged 25-39 with tertiary education (bachelor's degrees, AFAM, PhD).
(g) Per 100 persons aged 11 and over.
(h) Per 100 households.
(i) Per 100 Municipalities.
(l) Per 100 employed aged 20-64.
(*) Advance data.
(**) Provisional data.

12. Quality of services[1]

The availability of good public services affects daily lives of citizens and therefore their well-being and quality of life. However, having a wide range of services covering different sectors, from health services to assistance services, including those intended for fragile population groups (the elderly or disabled), from infrastructural services, for the supply of electric power and water, to those for separate collection and disposal of waste, from transport to fast internet connection, is not sufficient to ensure the well-being of the community. In order to assess well-being, it is necessary to reconstruct a territorial framework, both in terms of quantity and quality of supply. Quality is a theoretical construct that cannot be measured directly; it is a complex concept, comprising many dimensions. For this reason, in the conceptual Bes reference framework, indicators of supply and activity as well as indicators considered proxies for the quality of these services and infrastructures have been selected. The health crisis caused by the COVID-19 pandemic has put the health system under great pressure. To take into account this circumstance, the analysis of the Quality of Services domain is enriched with the introduction of new indicators describing the supply of beds in high-care wards and the accessibility of the national health system. Where it has not been possible to update data to take into account the current situation, for example with regard to the endowment of health personnel, the indicator still makes it possible to measure the pre-existing conditions of the pandemic, to observe their evolution over time and in the various regional territories.

Unmet need for medical examination increases, with more than 50% of population reporting reasons related to the COVID-19 pandemic

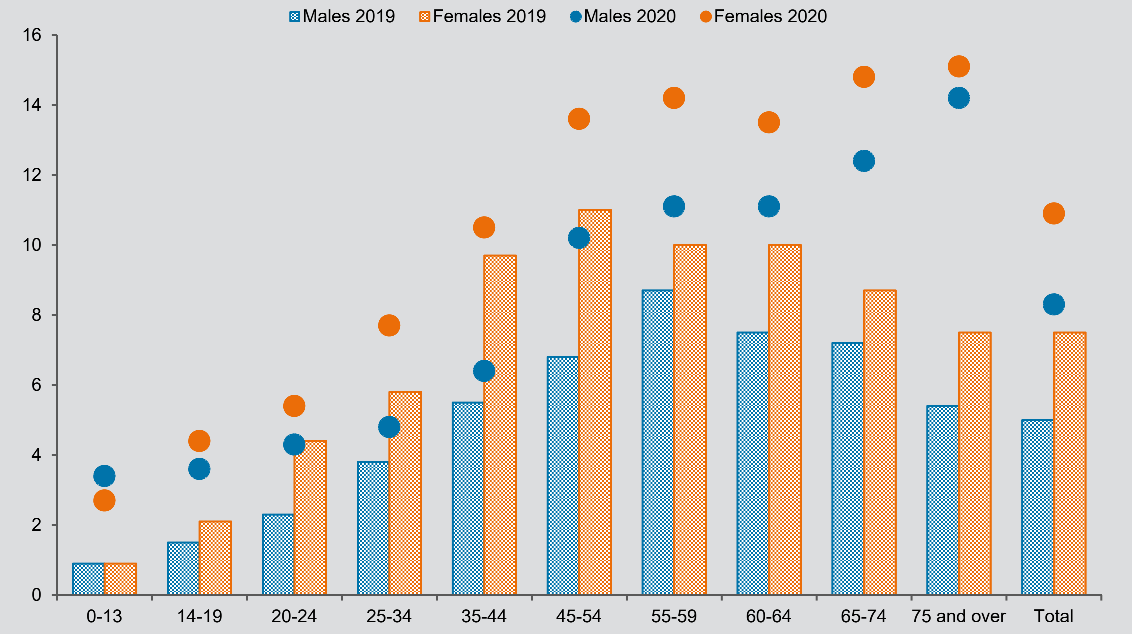
The accessibility of healthcare services is a relevant aspect of equity in the healthcare system. A useful indicator for measuring equity of access is the unmet need for medical examination, measured by the percentage of individuals having to give up medical care such as specialist examination or diagnostic tests due to economic problems or long waiting list or inconvenience (distant structure, lack of transportation, inconvenient hours).
In 2020, in Italy, one in ten people said they had given up medical care in the last 12 months for reasons related to difficulty of access, despite needing; in 2019 the percentage was 6.3%. 2020 data is certainly extraordinary, increasing by more than 40% comparing to 2019, due to the special situation related to the COVID-19 pandemic. The restrictions imposed to contain contagions, the fear of contracting infections, but above all the closure during the lockdown period, has not allowed access to necessary healthcare services, accumulating delays and lengthening of waiting lists, with a damage in terms of public health that is not yet measurable. More than 50% of population reporting they gave up medical care were for reasons related to the COVID-19 pandemic[2]. This result is clearly an exception respect to previous years, when the predominant reasons were economic problems and waiting lists.

1 This chapter was edited by Manuela Michelini, with contributions from: Alessandra Burgio, Alessia D'Errico, Lidia Gargiulo, Valentina Joffre, Alessandro Solipaca, Alessandra Tinto.

2 The possibility to specifically report in an open field the reason for having to give up medical care showed that the first reason was due to COVID, primarily for the inaccessibility and suspension part in disbursement, and more residually for fears of contagion.

In 2019, the indicator trend had declined throughout the Country, from 8.1% in 2017 to 6.3%. The decrease covered all regions even though the well-known territorial inequalities to the disadvantage of the South and Islands persisted (7.5% compared to 5.1% in the North). In 2020, in some regions of the North, such as Piemonte, Liguria, Lombardia and Emilia-Romagna, the percentage of the population reporting unmet needs for medical care is doubled compared with the previous year; in most cases, the reason is related to the pandemic (58.6% in Lombardia, 57.7% in Liguria, 52.2% in Emilia-Romagna and 48.5% in Piemonte). Women are more likely to report unmet needs for medical care and, in 2020, the group aged 75 and over is the most affected: 14.7% of them report unmet needs for medical care (Figure 1).

Figure 1. Percentage variation for Quality of Services indicators comparing to the value for Italy by region. Latest available year (a)



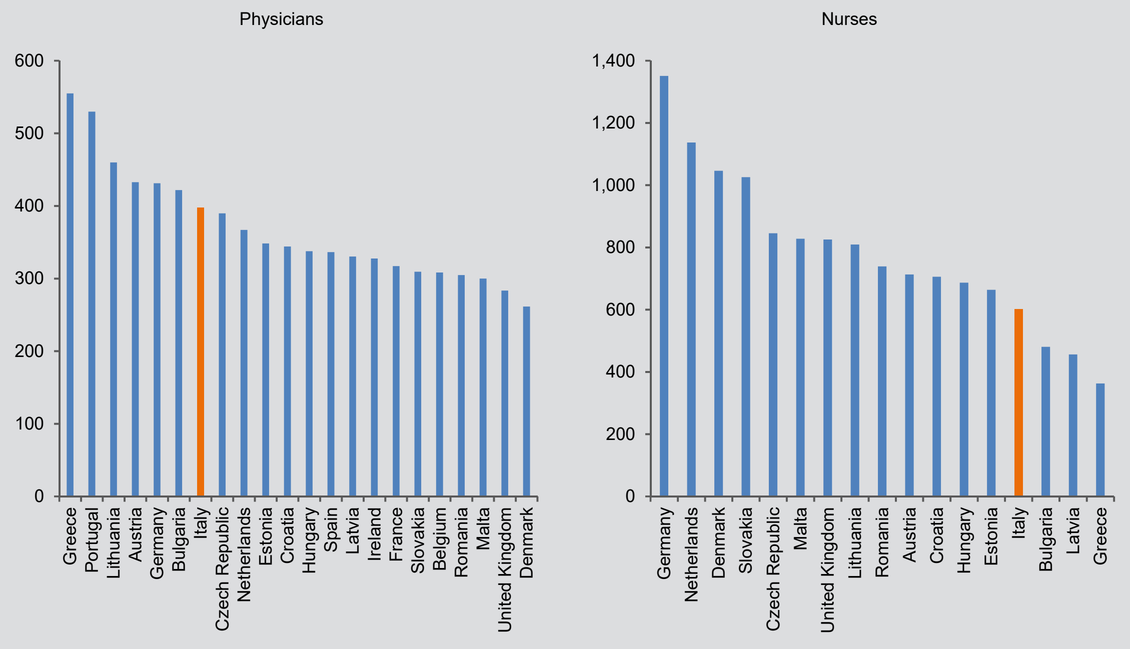
Source: Istat, Survey on Aspects of daily life
(a) 2020 data is provisional.

Italy ranks last in Europe for number of nurses, the average age for physicians is higher

A central factor in healthcare provision is the medical and nursing staff; together they represent more than half of those employed in the health sector (16.6% physicians and 41.1% nurses and midwives).
In 2019 in Italy, specialist and general practitioners and paediatricians working in the public and private health care system are about 241 thousand. With 4 physicians per 1,000 inhabitants, our Country ranks among the top Countries in Europe, with an endowment similar to that of the Czech Republic, Netherlands, and Bulgaria, slightly lower than that of Germany, but higher than Spain, France, and the United Kingdom (Figure 2).
Despite this relatively high rate, in our Country physicians are on average "older" than in other countries, partly due to certain choices made in recent years, such as the closed number of admission to degree programs and the policies of blocking turnover in public

health. The average age of physicians in Italy is 52.5 years old and one in two physician is older than 55, even among nurses, the average age is quite high (48.2 years) and one in four nurses is older than 55.
The situation is not as favourable for nursing staff, with approximately 6 nurses per 1,000 inhabitants, less than half of Germany's, Italy is at the bottom of the ranking, only followed by Bulgaria, Latvia and Greece.

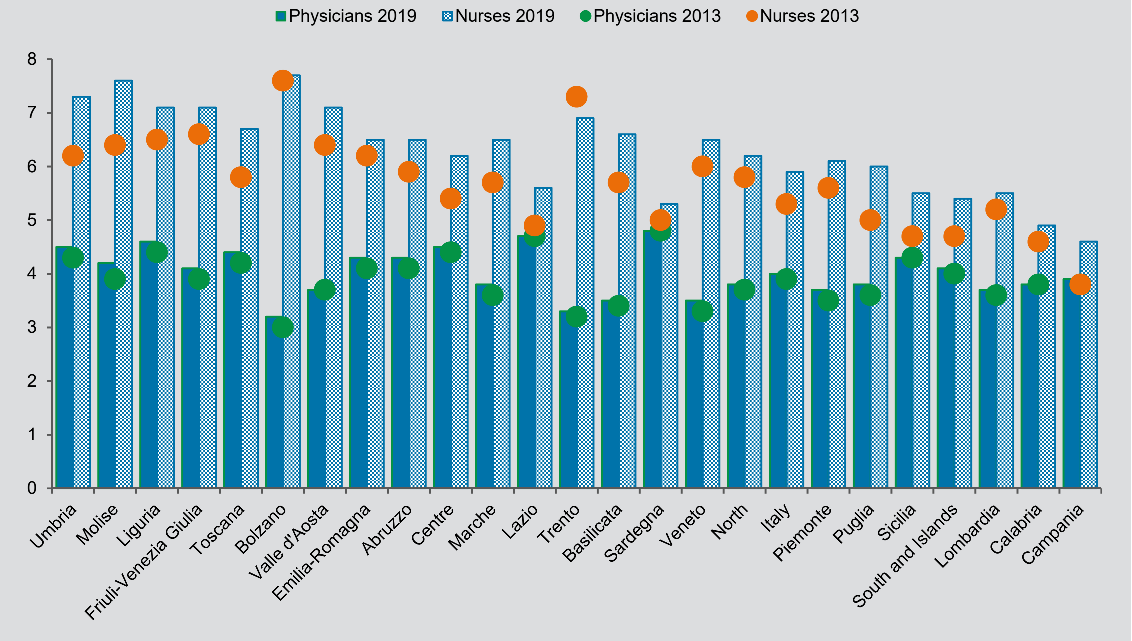
Figure 2.Physicians and nurses in Europe. Year 2018. Value per 1,000 inhabitants (a)



Source: Istat, Processing of data from Eurostat
(a) Data is not available for all Eu28 countries.

At the regional level, significant differences persist: regions with a greater allocation of physicians are Sardegna, Lazio, Liguria and Umbria, while in the autonomous provinces of Bolzano and Trento, Veneto and Basilicata the allocation is lower (Figure 3). With regard to the territorial distribution of nurses in 2019, differences are confirmed: in the North and Centre, this share is 6.2 while in the South and Islands it is only 5.4. Campania and Calabria are the regions with the lowest endowment of nurses, respectively 4.6 and 4.9 per 1,000 inhabitants, while the territories with the highest availability of nurses are the autonomous province of Bolzano (7.7 nurses per 1,000 inhabitants), Molise (7.6), Umbria (7.3), Valle d'Aosta, Liguria and Friuli-Venezia Giulia (7.1).
The proportion of nurses and midwives increased from 5.3 per 1,000 inhabitants in 2013 to 6.1 in 2017, the year in which growth stopped.

Figure 3. Physicians and nurses by region and geographic area (a)**. Years 2013 and 2019. Values per 1,000 inhabitants**



Source: Istat, Processing of Ministry of Health data
(a) Regions are represented in descending order of the number of doctors and nurses.

Over one third of general practitioners has a number of patients above the maximum threshold

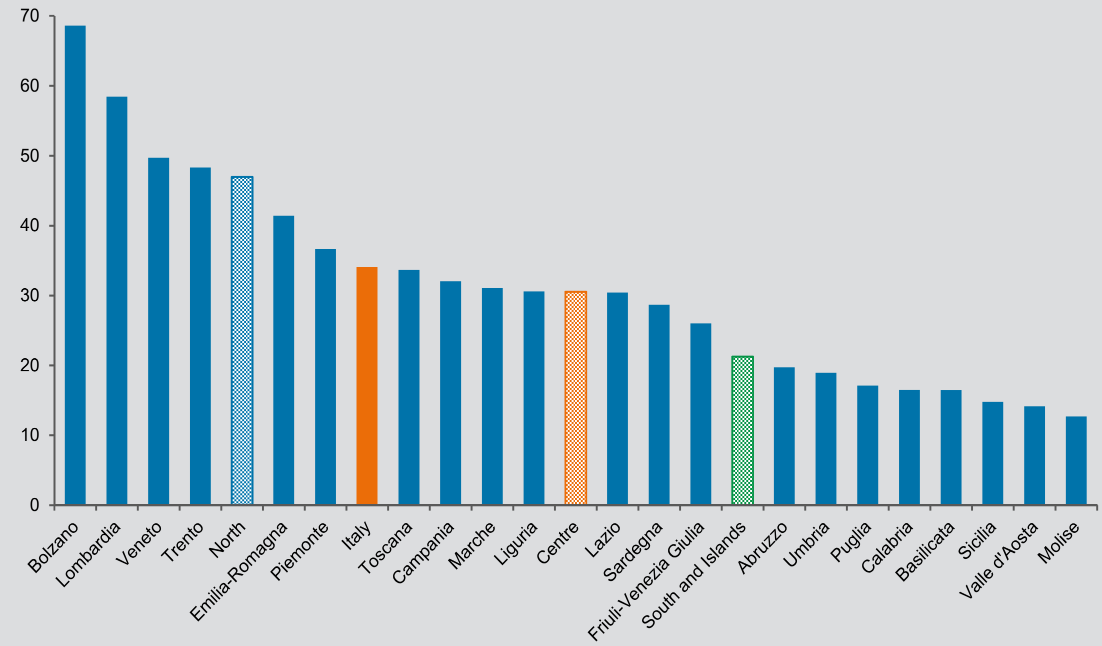
General practitioners are the main point of reference for health care in the territory, since they provide primary care, plan secondary care activities and refer patients to the facilities of the National Health Service for specialist services and instrumental diagnostics.

In Italy, in 2018, general practitioners (about 43 thousand) had an average of 1,212 patients per capita; national legislation establishes a ceiling of 1,500 patients, but this limit is not respected in many cases.

General practitioners with more than 1,500 patients may indicate a situation of overload, with the consequent implications in terms of loss of efficiency and possible deterioration in the quality of assistance.

In 2018, the proportion of physicians who had exceeded the threshold was 34%, more than doubling from 2005, when it was 15.9%. This increase was significant over the years across the Country: most substantial in the North, where it rose from 17.9% in 2005 to 46.9% in 2018, and smallest in the South and Islands (Figure 4). In particular, the regions with the highest percentages are the autonomous provinces of Bolzano and Trento, Lombardia, and Veneto, with values close to or above 50%.

Figure 4. Physicians and nurses by region and geographic area (a)**. Years 2013 and 2019. Values per 1,000 inhabitants**

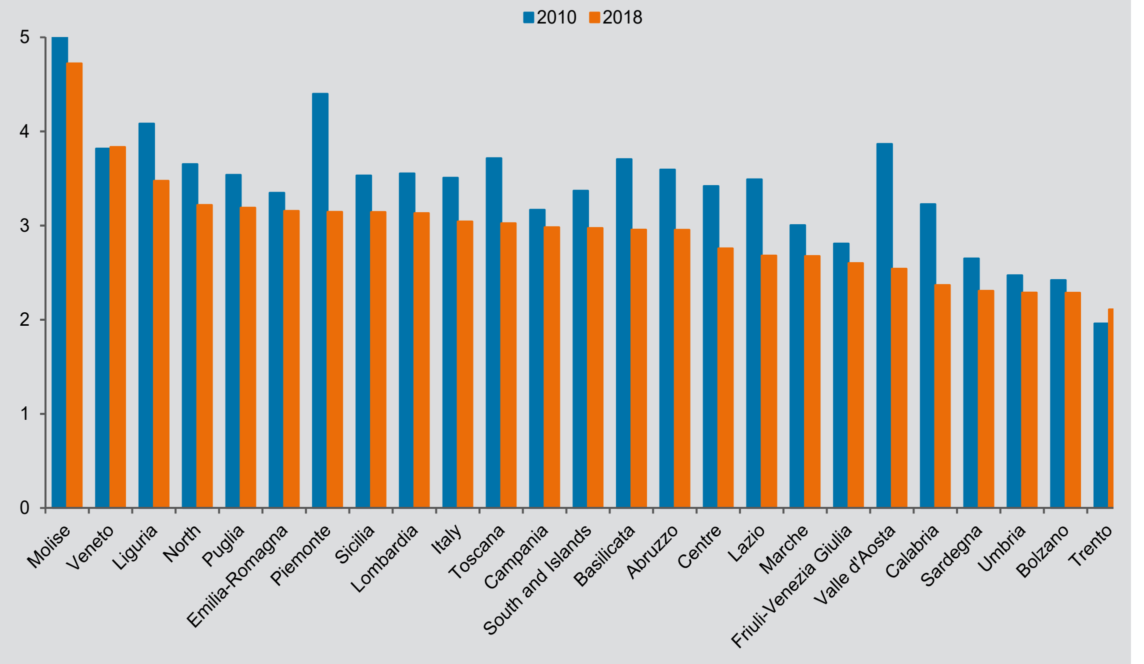


Source: Istat, Processing of Ministry of Health data

Hospital beds in high-care wards decreased

In the last few years, hospital supply has changed, with a reduction in facilities and beds: from 2010 to 2018, the number of beds decreased by an average of 1.8% per year, and in 2018, the total supply was 3.49 ordinary and day hospital beds per 1,000 inhabitants.
The composition of beds by department type also changed during these years. Between 2010 and 2018, the proportion of beds for basic specialties fell from 55.6% to 52.6%; in contrast, the proportion of beds in high care wards (paediatric cardiac surgery, cardiac surgery, tropical infectious diseases, spinal unit, neurosurgery, psychiatry, nephrology, haemodialysis, neonatology, paediatric neurosurgery) increased slightly from 24.6% to 25.2%; for intensive care, beds increased from 3.6% to 4.3%.
Although the high care departments have assumed greater weight in hospital activity, the number of beds they have has decreased: in 2018, the number of beds was 3.04 per 10 thousand inhabitants, while it was 3.51 in 2010.
In 2018, the supply of high-care beds varied greatly across the territory: it was highest in Molise, with 4.72 beds per 10,000 inhabitants, and lowest in Trentino-Alto Adige (2.11 in Trento and 2.29 in Bolzano). Compared to 2010, the reduction affected all regions except Veneto and the autonomous province of Trento, which remained stable, respectively, at 3.83 and 2.20 beds per 10,000 inhabitants. The region that has been most affected by the cut in the number of high care beds, however, was Piemonte, which has gone from 4.40 to 3.14, while remaining above the national average (Figure 5).

Figure 5. Hospital beds in high-care wards by region and geographic area. Years 2010-2018. Value per 10,000 inhabitants



Source: Istat - Processing of Ministry of Health data

Increasing hospital patient emigration to a different region, especially in the South and Islands

Hospital mobility, measured by the percentage of people who move to another region for hospitalisation, allows to evaluate the capacity of the regional health system to respond to the health needs of its inhabitants, as well as to bring to light any deficits in the quality and supply of regional hospital systems. This is a proxy indicator of the quality dimension, called responsiveness, which describes the capacity of the supply to meet the needs of users, both in terms of effectiveness, timeliness/accessibility and satisfaction with the services received.

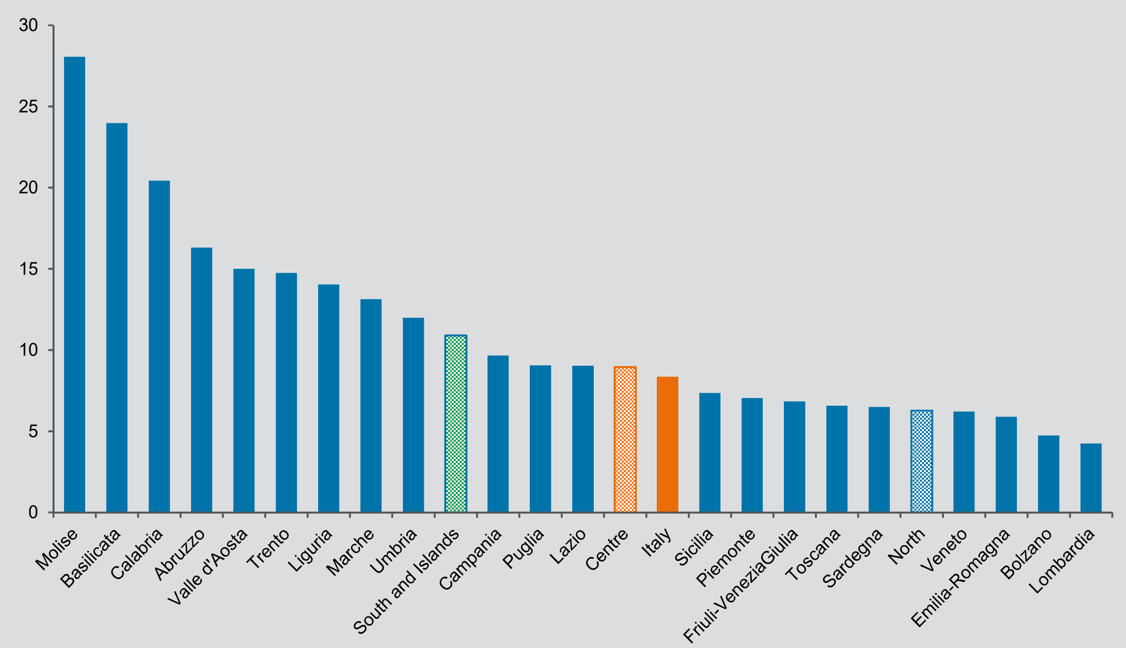
The indicator is the percentage of hospital discharges carried out in regions other than that of residence on the total discharges of residents in the region. Data refer only to inpatient discharges for "acute" care (excluding hospitalisations of "spinal unit", "functional rehabilitation", "neuro-rehabilitation", "long-term care").

Hospital emigration in Italy is around 8% and the percentage is continuously increasing: it went from 7.2% in 2004 to 8.3% in 2019, with strong territorial inequalities.

The percentage of people who move to another region for hospitalisation is higher in the South and Islands, with higher percentages in small regions, where it is easier to be hospitalised in a different region due to geographical proximity. The percentage of hospital discharges carried out in regions other than that of residence is 28.1% in Molise and 24% in Basilicata. A critical situation is recorded in Calabria, where the percentage of hospital migration is 20.4%; in this case, the criticality is also due to a lack of infrastructure, since Calabria has the lowest number of beds per inhabitant (2.5 per 1,000 inhabitants) in the Country.

The regional hospital system with the lowest “loss” of hospitalisations is that of Lombardia (4.2%), followed by those of the autonomous province of Bolzano[3] (4.7%) and Emilia-Romagna (5.9%) (Figure 6).

Figure 6. Hospital patient emigration to a different region, by region and geographic area. Year 2019. Percentage values



Source: Istat, Processing of Ministry of Health data

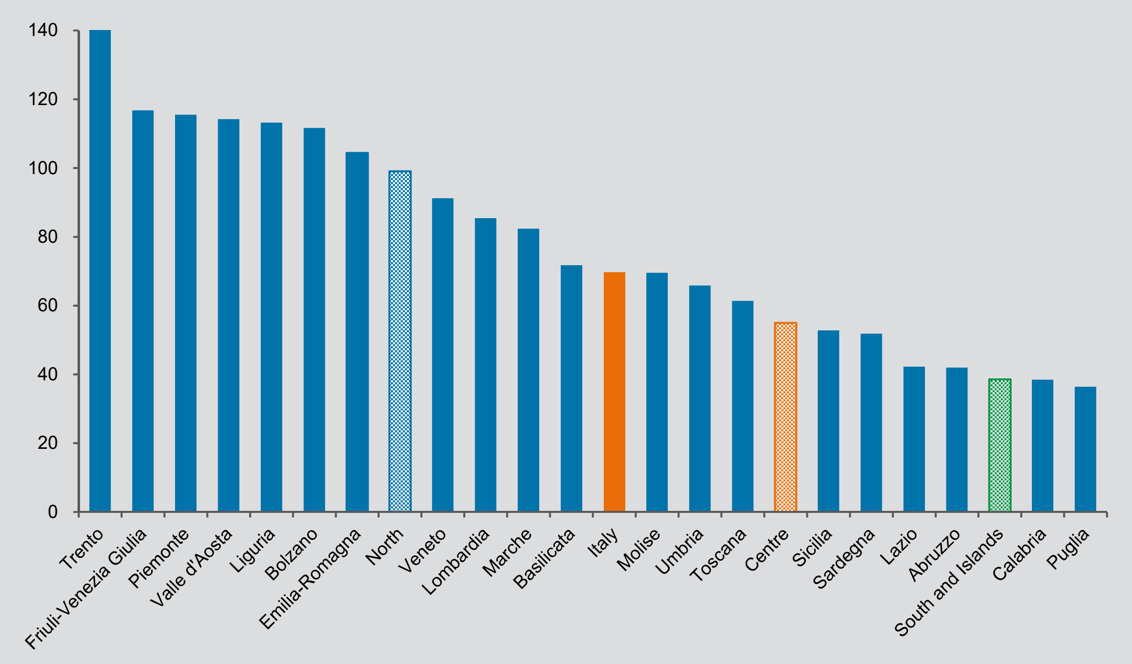
Social and health care, aimed at treating the specific needs of the most fragile part of the population such as people with health problems or social and economic hardship, is provided through the services of residential or home-based facilities.

Residential health and social care facilities most widespread in the North

With regard to the services provided by health and social care residential facilities, facilities in Italy in 2018 were 12,501, with a total of 412,518 beds, equal to 69.6 per 10,000 inhabitants, increased by 7.6 beds compared to 2012.
The availability of beds in these facilities mainly responds to needs links to the progressive ageing of the population: more than 70% of the beds, in fact, are in facilities taking care for the elderly (73%).
The supply of beds is stable compared to 2016, but a strong territorial divide remains: beds in the North are 99 per 10,000 inhabitants, in the Centre they drop to 55 and in the South and Islands they are only 38.6.
At the regional level, the autonomous provinces of Trento and Bolzano, Piemonte, Friuli-Venezia Giulia, Valle d’Aosta and Liguria exceed 100 beds per 10,000 inhabitants, while Abruzzo, Lazio, Calabria and Puglia have an availability of less than 50 beds. In Campania, there are only 18.5 beds for every 10,000 inhabitants (Figure 7).

3 Data of Bolzano does not include people who choose to be hospitalised abroad, and could therefore be underestimated.

Figure 7. Beds in health and social care residential facilities by region and geographic area. Year 2018. Value per 10,000 inhabitants



Source: Istat, Residential health and social care facilities

Integrated home assistance service

Integrated home assistance service, which provides medical, nursing and rehabilitative treatment integrated with social assistance and family support services, enables people to receive assistance while remaining at home. The indicator measures the volume of assistance activity provided to not self-sufficient elderly. In 2019, there were about 378 thousand elderly people aged 65 and over using this service (2.7%), slightly increasing (it was 2.2% in 2015). The percentage is by far the highest among people aged 75 and over (4.5%), while it drops to 0.9% among those aged 65-74.
The supply of home assistance is homogeneous across the Country: 3 people aged 65 and over use the service in the North, 2.6 in the South and Islands and 2.3 in the Centre. Only Lazio, Valle d'Aosta, Calabria and the autonomous province of Bolzano show a critical situation, not reaching the quota of 1.5% of elderly treated with integrated home assistance service.

Very difficult to reach some basic services in the smallest municipalities

A widespread distribution throughout the Country of facilities providing essential services to citizens, such as pharmacies, emergency rooms, post offices or municipal offices, supermarkets, schools or police stations is of fundamental importance for the well-being of population.
In the three-year period 2018-2020, 6.1% of households reported experiencing many difficulties in reaching at least three essential services. In small municipalities with up to 2,000

inhabitants, the percentage of households reporting difficulties in access rises to 8.4%, while it is halved in metropolitan areas (4.6%). In addition, the percentage of households reporting difficulties is much higher in the southerm areas (9.2%) and, in particular, it exceed 10% in Calabria, Sicilia and in Campania.
Over time, the indicator shows a slight improvement. In the three-year period 2015-2017, in fact, it was 7.6%. This slight improvement has been steady and widespread across the territory, and the largest reductions, equal to about 3 percentage points, were recorded in Emilia-Romagna, Lazio and Puglia.

Irregularities in water supply and in electric power distribution especially in Calabria and Sicilia

Public utilities are an important asset for a country, and the availability of services and the regularity of their delivery contribute to improving the lives of citizens. Among the fundamental infrastructures, the most relevant are those providing electricity and water, the quality of which can be represented by the indicator of frequency of irregularities in supply.
The share of households reporting irregularities in the water service in 2020 is 9%, but the situation is diversified on the territory. In fact, we go from regions such as Calabria and Sicilia, where this problem concerns, respectively, 38.8% and 22.1% of households, to areas where the problem is almost non-existent, such as the autonomous provinces of Trento and Bolzano (1.5 and 1.2%).
Interruptions in the supply of electricity create important inconveniences, both for domestic and economic activities.
The Italian Regulatory Authority for Energy, Networks and Environment reports an average of 2 accidental long interruptions (more than 3 minutes) per user per year. This figure is stable over time, with a chronic difference between North and South: the regions that have always suffered the highest number of interruptions are Sicilia (4.9), Campania and Calabria (about 4 interruptions).

Continuous progress in internet coverage, but very high capacity network coverage still low

During the last decade, the development of technologies allowing internet access has undergone a strong impulse, both for citizens and for public and private companies. The possibility of being connected has, in fact, become one of the objectives of the strategic plan of the ultra broadband of the Ministry of Economic Development.
The digital transition process of the Country has advanced at a steady pace from year to year and in the last decade the situation has improved significantly, so that, in 2019, the percentage of households with access to broadband is 88.9% while in 2011 it was just 10%. However, despite the progress, Italy is still slightly below the European average. The broadband infrastructure is no longer sufficient to cover current connection needs, so it was deemed necessary to invest in a faster connection, i.e. ultra broadband.
The importance of connectivity has become even more evident since the ongoing pandemic has forced the entire world to rethink their way of interacting, communicating, working and learning. The need to contain contagions has forced people to limit physical contact and consequently has made it essential to resort to smart working and distance learning. In

addition, the current situation has made the opportunities offered by digital channels even more evident in terms of socialisation and social relations, as well as in terms of the market, increasing exponentially the pressure on the digital infrastructure.

Ultra-Broadband Plan aims to develop an advanced network on the entire national territory, to create a public telecommunications infrastructure consistent with the objectives of the European Digital Agenda. This strategy aims to reduce the infrastructure and market gap existing in some areas of the country, through the creation of more favourable conditions for the integrated development of fixed and mobile telecommunications infrastructures, and represents the national reference framework for public initiatives to support the development of ultra broadband networks in Italy.

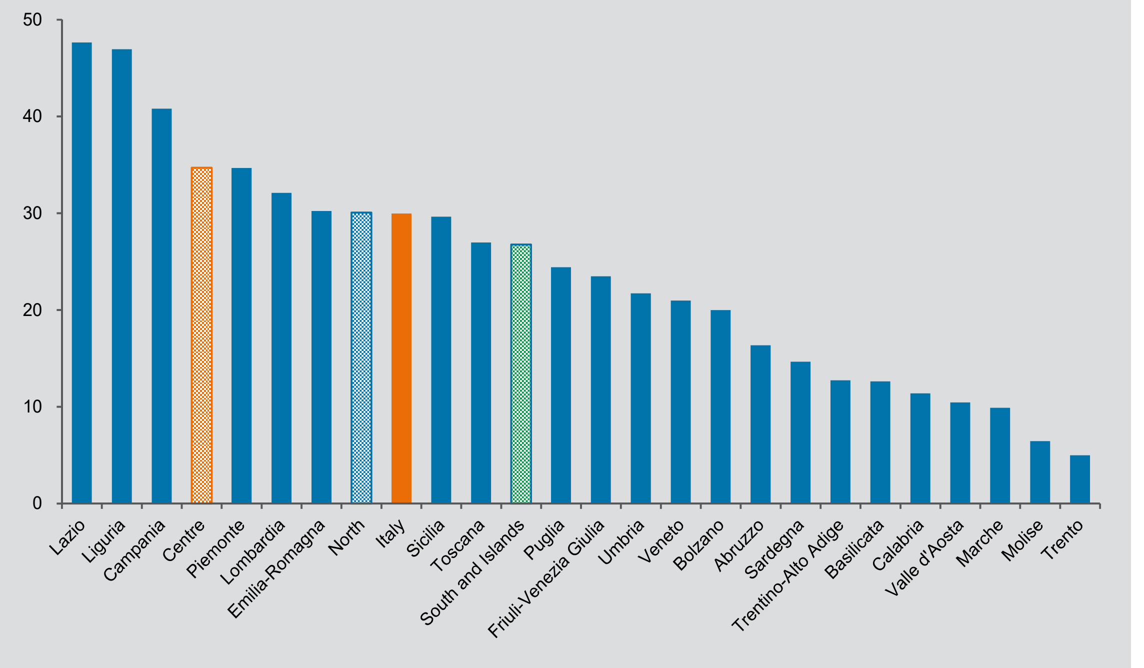
Among the objectives of the Digital Agenda for Europe, there is that of reaching by 2025 the connection speed of at least 100 Megabits per second (Mbps), expandable to 1 Gigabit (1,000 Megabits) per second, for all European households.

In 2019, 30% of households in Italy had access to high-capacity next-generation networks, a growth of 6.1 percentage points over the previous year. These connections are predominantly based on the principle of bringing optical fibre all the way into users' homes (Fibre To The Home, FTTH).

However, there are still very large differences across the territory, with regions that have a share of households served by ultra broadband connections exceeding 40%, such as Lazio, Liguria and Campania, and territories that do not even reach 10%, such as Marche, Molise and the autonomous province of Trento (Figure 8).

The South and Islands made a significant step forward, doubling their coverage, which has allowed to reduce the gap with the Centre-North regions: the percentage of households covered by ultra-broadband in the South rose from 15.8% in 2018 to 26.8% in 2019.

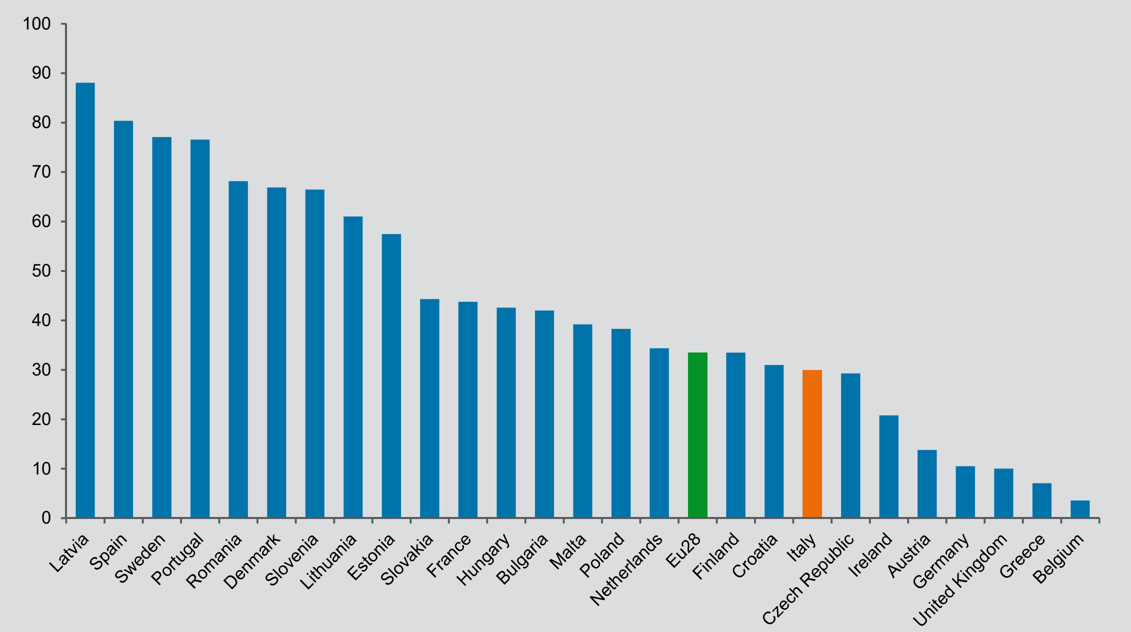
Figure 8. Households which are resident in an area served by a very high capacity network by region and geographic area. Year 2019. Percentage values



Source: Istat, Processing of Agcom data

While the process of broadband development is practically complete in almost all European Union countries, the situation is different for ultra broadband connections. Analysis of FTTH connections in EU28 countries show that in Italy the percentage of homes served is slightly lower than the European average (33.5%), in a position similar to that of the Czech Republic and Croatia and very far from the percentages recorded in Latvia, Spain and Sweden (88.1%, 80.4% and 77.1%, respectively) (Figure 9).

Figure 9. Households which are resident in an area served by FTTP coverage in Europe. Year 2019. Percentage values



Source: Istat, Processing of Broadband Coverage data in Europe 2019

The target of 65% separate collection of waste has not yet been reached

Among the essential services enjoyed by the population, the separate collection of urban solid waste is the prerequisite for reducing the amount of waste sent to landfills, limiting health risks and ensuring, in addition to a more efficient use of resources, benefits to the environment and the economy.

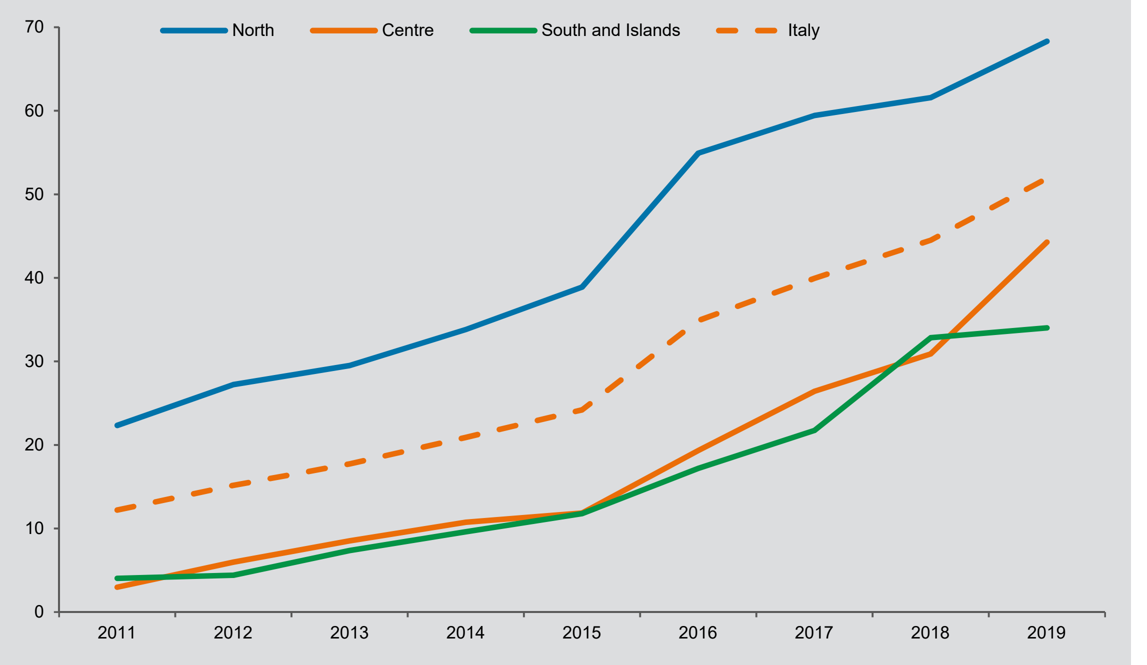
In order to monitor the quality of the waste collection service, with a view to achieving the objective imposed by current legislation (art. 205 of Legislative Decree 152/06), we analyse the regional indicator that measures the proportion of the resident population living in municipalities that have achieved the objective of 65% of separate waste collection.

In the last ten years, separate waste collection has increased considerably, from 12.2% in 2011 to 51.9% in 2019. The progress is homogeneous throughout the Country, although in the last year, after a long positive evolution, there is a setback in the South and Islands, where it remains just above 30%, with an increasing gap compared to the North.

Italy, as a whole, has not yet reached the 65% objective, due to the insufficient share of municipalities in the Centre and South and Islands separating waste.

The territories that have exceeded the target of separate collection are the autonomous provinces of Trento and Bolzano, Veneto, Lombardia, Emilia-Romagna, some of the central regions, such as Marche, Umbria and Sardegna. Furthest from the objective, with values below 30%, we find Sicilia, Calabria, Lazio, Campania and Basilicata. In the last year, Emilia-Romagna and Umbria are the only regions which achieved the objective.

Figure 10. Resident population in municipalities with separate waste collection greater than or equal to 65% by geographic area. Years 2011-2019. Percentage values



Source: Istat, Processing on ISPRA data

The offer of local public transport services is very unequal on the territory

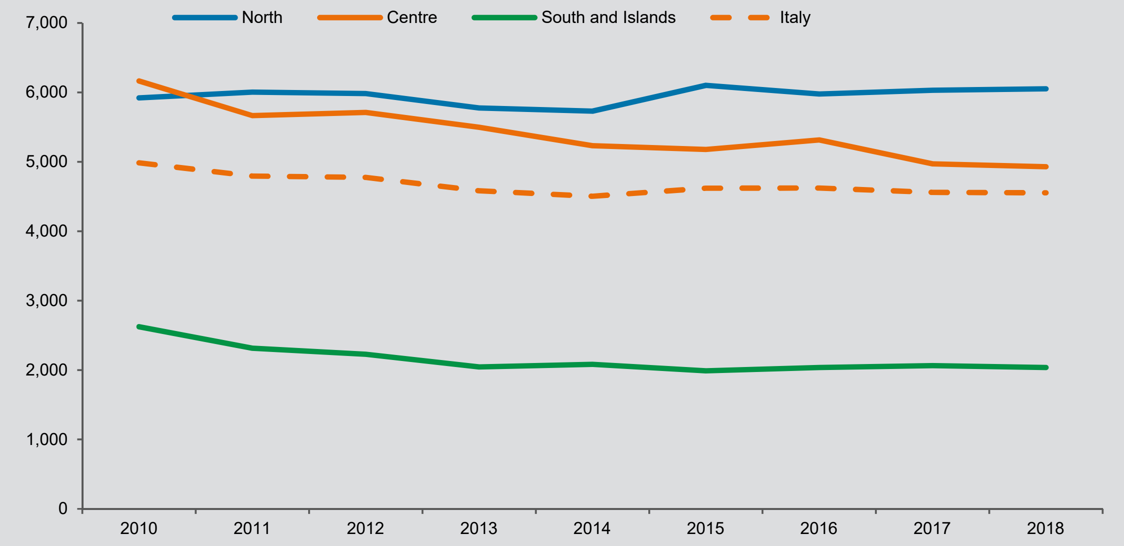
The availability of a local public transport offer that is adequate to the needs of the population is an essential aspect for the quality of life in cities. A widespread and efficient service reduces traffic congestion and consequently travel times, contains the economic costs for families and businesses and ensures better air quality by reducing the use of private vehicles.

In 2018 in the provincial capitals, the supply of local public transport services was, on average, 4,553 seat-km per inhabitant, slightly down for the second consecutive year, with a strong differentiation between the cities of the North and Centre and those of the South and Islands.

The cities of the North and Centre have a greater supply of seats, respectively 6,052 and 4,929 seat-km, while a resident in the South and Islands have available only a little more than 2,000 seat-km.

The situation remains stable in the North and South, although at very different levels, while in the Centre there has been a continuous deterioration, so much so that since 2010 there has been a decrease of 1,800 seat-km per inhabitant.

Figure 11. Seat-Km of public transport networks per capita (a) **in provincial capitals by geographic area. Years 2004-2018. Values per inhabitant**

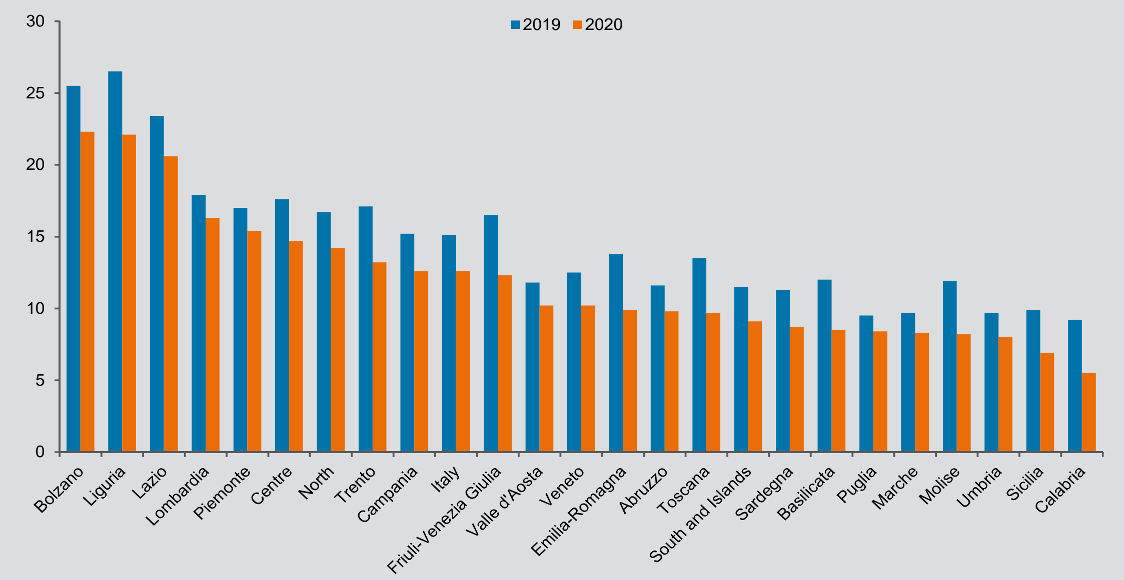


Source: Istat, Survey on urban environmental data
(a) This includes seat-km offered by buses, trams, trolleybuses, metro, funiculars, waterways and cable cars.

In 2020 decreased use of public transport

On the demand side of public transportation, the share of population aged 14 and over assiduously using mobility services has been stable at above 15% for over 10 years. In 2020, the use of public means of transport dropped by 2.5 percentage points, from 15.1% in 2019 to 12.6%, due to the travel restrictions imposed by the government during the lockdown period, which changed the habits and behaviours of citizens.

Figure 12. Frequent users of public transport by regions. Years 2019-2020 (a)**. Percentage values**



Source: Istat, Survey on Aspects of daily life

This contraction affected all regions. Wider use of public transport is recorded in the regions of Centre and North, particularly in Liguria (22.1%), Lazio (20.6%) and the autonomous province of Bolzano (22.3%), the lowest in Sicilia (6.9%) and Calabria (5.5%).
The profile of public transportation users has remained the same as in the past, but the greatest contraction has occurred among younger people. Half of users are under 20 years of age (49.9% vs. 59.1% in 2019) and one in four are aged between 20 and 24 (27.1% vs. 33.1% in 2019); women also use mobility services more often than men (13.7% vs. 11.4%).

Only one user on five is pleased with means of transport

In general, public transport users are not very satisfied with the service, and the levels of satisfaction expressed, despite the contraction in travelling, remain stable: only one in five user (19.5%) rates the quality of the service positively in 2020.
The most satisfied are inhabitants of the North regions, while Lazio and Campania remain the regions with the lowest proportion of satisfied users, with only 8% and 9.6% of regular users respectively giving a rating of at least 8 (on a scale of 0 to 10) to mobility services.
However, over the course of a decade and to a significant extent over the last year, citizen satisfaction with mobility services has tended to improve, driven by the regions of the South and Islands, in particular Sicilia and Sardegna.

Indicators

1. **Beds in the residential social-healthcare and social-welfare:** Social welfare and social-healthcare residences are public or private facilities that provide residential services (assisted hospitality with overnight stay) of a social welfare and/or social-healthcare type to people in need.
   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: Istat Processing of data from the 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 on total number of households.
   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: Istat, 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.
   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), over the total number of regular users aged 14 and over.
   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 coverage:** Percentage of households which are resident in an area served by a very high capacity network.
   Source: Istat, Processing of Agcom data.
10. **10. Separate collection service for municipal waste:** Percentage of resident population in municipalities with separate collection greater than or equal to 65%.
    Source: Istat, Processing of ISPRA data
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: Istat, Processing of Ministry of Health data
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 hospitalisations of "spinal unit", "functional rehabilitation", "neuro-rehabilitation", "long-term care").
    Source: Istat, Processing of Ministry of Health data
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: Istat, Processing of Ministry of Health data
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 region and geographic area

REGIONS AND GEOGRAPHIC AREAS	Beds in the residential social-healthcare and social-welfare facilities (a) 2018	Integrated home assistance service (b) 2019	Composite index of service accessibility (c) 2018-2020 (*)	Irregularities in water supply (c) 2020 (*)	Irregularities in electric power distribution (d) 2019	Seat-Km of public transport networks (e) 2018	Satisfaction with means of transport (f) 2020 (*)
Piemonte	115.5	2.7	5.3	4.1	1.8	4,967.7	16.4
Valle d'Aosta/Vallée d'Aoste	114.2	0.6	7.1	3.0	0.9	757.5	44.2
Liguria	113.2	3.3	4.7	3.2	1.3	4,296.3	19.3
Lombardia	85.4	2.6	3.6	3.1	1.4	10,471.7	22.4
Trentino-Alto Adige/Südtirol	131.4	1.7	2.4	1.4	2.7	3,850.9	51.0
Bolzano/Bozen	*111.7*	*0.2*	*2.3*	*1.2*	*4.4*	3,608.8	54.8
Trento	*150.8*	*3.1*	*2.5*	*1.5*	*1.4*	4,071.2	44.7
Veneto	91.2	3.9	4.2	2.8	1.4	5,405.6	24.0
Friuli-Venezia Giulia	116.8	3.1	5.0	1.8	1.0	4,109.7	41.5
Emilia-Romagna	104.4	3.5	4.7	3.0	1.3	2,798.4	27.5
Toscana	61.3	3.0	5.3	5.5	1.8	2,791.9	19.7
Umbria	65.8	3.0	4.8	5.5	1.7	1,797.8	25.2
Marche	82.3	3.3	4.3	4.0	1.6	2,209.4	30.2
Lazio	42.2	1.4	6.5	12.4	2.7	6,367.8	8.0
Abruzzo	42.0	3.8	6.1	17.8	2.3	2,350.9	26.3
Molise	69.5	5.1	5.0	15.2	1.9	872.1	17.6
Campania	18.5	2.5	10.1	15.8	4.1	2,066.3	9.2
Puglia	36.4	2.0	8.6	7.6	3.5	2,123.3	17.8
Basilicata	71.8	4.1	7.9	9.3	2.8	1,106.6	19.8
Calabria	38.5	0.4	11.2	38.8	4.0	1,773.0	14.4
Sicilia	52.8	4.4	10.1	22.1	4.9	1,796.9	20.3
Sardegna	51.8	....	6.0	13.5	3.3	3,289.0	34.1
North	99.0	3.0	4.2	3.1	1.5	6,051.9	24.0
Centre	55.0	2.3	5.7	8.7	2.2	4,929.1	12.7
South and Islands	38.6	2.6	9.2	17.8	3.9	2,035.5	16.6
Italy	**69.6**	**2.7**	**6.1**	**9.0**	**2.4**	**4,553.2**	**19.5**

(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;
(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.

Overall Fixed Very High Capacity Network (VHCN) coverage (c)	Frequent users of public transport (g)	Hospital beds in high-care wards (a)	Separate collection service for municipal waste (c)	Hospital patient emigration to a different region (h)	Unmet need for medical examination (i)	General practitioners with a number of patients above the maximum threshold (l)	Physicians (m)	Nurses and midwives (m)
2019	2020 (*)	2018	2019	2019	2020 (**)	2018	2019	2019
34.7	15.4	3.1	49.2	6.7	10.5	36.6	3.7	6.1
10.4	10.2	2.5	62.7	15.8	8.9	14.1	3.7	7.1
46.9	22.1	3.1	38.5	4.5	11.0	58.4	4.6	7.1
32.1	16.3	2.3	75.3	9.5	10.0	57.2	3.7	5.5
12.7	17.7	2.1	80.2	4.9	7.7	68.6	3.3	7.3
20.0	*22.3*	2.2	*68.3*	*14.6*	7.5	48.3	3.2	7.7
5.0	*13.2*	3.8	*91.8*	*6.2*	7.9	49.7	3.3	6.9
21.0	10.2	2.6	81.4	7.0	8.9	26.0	3.5	6.5
23.5	12.3	3.5	58.3	13.5	7.7	30.6	4.1	7.1
30.2	9.9	3.2	67.2	5.7	10.2	41.4	4.3	6.5
27.0	9.7	3.0	51.1	6.4	8.3	33.7	4.4	6.7
21.7	8.0	2.3	66.7	11.7	10.5	19.0	4.5	7.3
9.9	8.3	2.7	78.9	13.1	10.1	31.0	3.8	6.5
47.6	20.6	2.7	27.4	9.1	11.5	30.4	4.7	5.6
16.4	9.8	3.0	60.9	16.6	12.2	19.7	4.3	6.5
6.4	8.2	4.7	37.2	28.6	9.3	12.7	4.2	7.6
40.8	12.6	3.0	28.1	9.7	7.4	32.0	3.9	4.6
24.4	8.4	3.2	39.6	9.0	10.7	17.1	3.8	6
12.6	8.5	3.0	28.8	24.7	8.6	16.5	3.5	6.6
11.4	5.5	2.4	26.2	19.8	7.4	16.5	3.8	4.9
29.6	6.9	3.1	17.2	7.5	7.5	14.8	4.3	5.5
14.6	8.7	2.3	81.2	6.4	14.8	28.7	4.8	5.3
30.1	14.2	3.2	68.3	6.3	9.8	46.9	3.8	6.2
34.7	14.7	2.8	44.3	9.0	10.3	30.6	4.5	6.2
26.8	9.1	3.0	34.0	10.9	9.0	21.3	4.1	5.4
30.0	**12.6**	**3.0**	**51.9**	**8.3**	**9.6**	**34.0**	**4**	**5.9**