Future Lives

A DAY IN 2050

Foreword

The future does not arrive all at once. It takes shape through the everyday decisions of millions of people: when to start a family, how to organise work, who to share a home with, or how to grow older. These choices may seem deeply personal and individual, but they also reflect profound changes taking place across society. If we learn to recognise them early enough, they give us all the opportunity to act in time and turn challenges into opportunities.

Future Lives was born out of precisely this effort. Drawing on decades of evidence and the expertise of specialists from a range of fields, it examines how people's life trajectories are changing in Spain and explores how they could evolve between now and 2050. This is not an exercise in prediction, but one of responsibility: identifying the trends already under way —in family life, work, care, health and personal relationships— so that the decisions we make today can meet the challenges of tomorrow.

Spain has a genuine opportunity ahead. The transformations described in this report are not inevitable outcomes, but signals that invite us to anticipate change, innovate and build a society better prepared for what lies ahead. They concern all of us, not only governments and public institutions. The public policies we design, but also the strategic choices each of us makes in our own sphere, will play a major role in shaping the quality of life of people in Spain by the middle of the century.

That is the future we are working towards. And that is the ambition behind this report.

Pedro Sánchez Pérez-Castejón

Prime Minister of Spain

Contents

Executive Summary 4

Future Lives: Social Foresight in Spain 9

More Diverse Families 13

Homes for Living Together 17

Schools in Transformation 20

Working to Live 24

Leisure Online and On Demand 27

Diverse and Digital Social Ties 30

Making the Most of Travel Time 33

Changing Ways of Eating 35

Living Longer, Living Better 38

Shared Care 41

Action Strategies for Future Lives 43

Contributions 49

References 51

Executive Summary

Western societies are undergoing profound transformations that are reshaping life trajectories and the way everyday life is organised. Rising life expectancy, changing life stages and relationships, declining birth rates, growing cultural diversity and women's increased participation in the labour market are all examples of shifts shared by countries across our region. At the same time, digitalisation is playing an increasingly central role in how people work, spend their leisure time and relate to one another, contributing to greater fragmentation in identities and in the ways people interpret reality. Social life is gradually shifting towards digital environments, with a relative decline in activities based on face-to-face interaction. This shift is bringing platforms, technology companies and digital services more deeply into everyday life and, in turn, transforming social ties and ways of living together.

These global trends are expected to deepen over the coming decades and provide the starting point for the scenarios explored in this report. As Spain looks towards 2050, its society is already profoundly different from that of the beginning of the century, as a result of the collective choices and policies pursued over recent decades. The main challenge will be to consolidate and build on this progress, expanding opportunities for people without creating new inequalities.

While the *Spain 2050* report provided a long-term framework for understanding the country's major structural challenges, Future Lives complements that perspective by focusing more closely on the personal trajectories, social relationships and everyday lives of those who will be living in Spain by the middle of the century, with particular attention to Generation Alpha. Taking those born around 2018 as a reference point, by 2050 this cohort will be approximately 32 years old and entering key stages of adult life, such as establishing themselves in the labour market or forming a household. Most of their parents belong to the Millennial generation, born during the 1980s, while their grandparents are part of the Baby Boom generation, born in the early 1960s.

Looking across these generations allows us to examine how social, economic and technological transformations affect each of them differently and shape their life trajectories. This provides a particularly valuable

basis for adapting strategic frameworks and public policies to the challenges and opportunities Spain will face by the middle of the century.

The projections presented in this report should not be understood as fixed predictions or inevitable trajectories. Rather, they are plausible scenarios built on established trends observed over recent decades, international comparisons and analysis by scientific experts in the relevant fields. Their contributions have helped enrich and refine the different scenarios presented here. However, how these dynamics ultimately evolve will depend to a large extent on collective choices, technological innovation, cultural change and the public policies adopted in the years ahead. The purpose of this exercise, therefore, is not to predict what everyday life will look like in 2050, but to identify far-reaching transformations that can help us anticipate today the public action that may be needed tomorrow.

More Diverse Families. By 2050, the family will remain a cornerstone of social life, but family structures and living arrangements are likely to become increasingly diverse. If the trends observed over recent decades continue, the average age at first motherhood will reach 32. Births to women over 40 will continue to account for a greater share than births to mothers under 25, while marriage is likely to become less common.

The proportion of people without children will continue its gradual rise: at least one in four women and one in three men may remain childless. Decisions about whether to have children will be shaped not only by economic and employment circumstances, but also by the difficulties some people may face in finding and establishing a suitable, stable partnership. In 2024, only 52% of people aged 30 to 34 lived with a partner, compared with 83% in the 1980s. At the same time, parenthood is becoming less central to the personal aspirations of a growing share of young people. Greater social acceptance of child-free lives, more diverse personal and professional aspirations, new forms of intimate relationships and increasingly demanding expectations around parenting could further reinforce these trends.

New ways of forming families will also increasingly involve living with children from previous relationships, alongside a rise in the number of women choosing to become single mothers. Stable couples who do not live together are also likely to become more common—a pattern currently associated both with difficulties in accessing housing and with a preference for maintaining personal and financial independence.

Homes for Living Together. Homes and neighbourhoods will be reshaped by broader demographic and social changes. Households are likely to become smaller and more diverse, with greater residential mobility and more people living alone, groups of young people sharing homes, families from different backgrounds, and a wider range of relationships and living arrangements beyond married and unmarried couples.

Homes themselves may evolve towards more flexible layouts that can adapt to these new ways of living together, combining shared spaces with areas that offer greater personal autonomy. At the same time, making further progress in improving the energy efficiency of the housing stock will be essential both to adapt to climate change and to prevent new inequalities in housing conditions.

Schools in Transformation. With continued growth in public support, the education system will be able to make further progress in promoting student well-being, active learning and the development of skills such as creativity, communication and teamwork.

Access to early childhood education could continue to expand, approaching enrolment levels in European countries with some of the highest coverage, such as Sweden, Norway and Denmark. At the same time,

digital technologies will help personalise learning and support teachers in their work, although their use will need to be carefully managed to mitigate the risks associated with hyperconnectivity and overstimulation.

Building on current trends, the education system will also need to adapt to increasingly diverse classrooms and greater social and cultural diversity. Improving working conditions for teachers, investing in infrastructure and ensuring equitable access to educational activities outside school hours will be key to further reducing the risk of educational segregation and enabling all students to fulfil their potential.

Working to Live. Working lives are likely to become more flexible and less linear, as the traditional boundaries between education, employment and retirement become increasingly blurred. Working hours may decrease, remote work may become more widespread, and lifelong learning will become increasingly important as workers adapt to a rapidly changing technological environment.

At the same time, ensuring equal access to these opportunities will remain a major challenge. Over the next two decades, the gradual development of public policies will be crucial to prevent improvements in employment and work-life balance from being unevenly distributed across workers in different sectors and at different skill levels. Automation could also widen disparities between workers depending on their ability to adapt to technological change.

In this context, lifelong learning, better working conditions and the ability of companies to adapt to increasingly diverse workforces will be key to continued progress towards a more inclusive labour market.

Leisure Online and On Demand. Over the coming decades, leisure will continue to play an increasingly important role in everyday life. New ways of organising working time, technological advances and more equal sharing of work and care responsibilities could increase the amount of free time available. Much of this time is likely to be spent in increasingly personalised digital environments. Algorithms, streaming platforms and recommendation systems will continue to shape leisure experiences that are increasingly tailored to individual habits and preferences.

This transformation could intensify exposure to digital stimuli, blur the boundaries between leisure and productivity, and create new pressures on attention, rest and mental health. In this context, offline experiences centred on disconnecting from technology, social interaction and sustained attention could become increasingly valuable. Educational, community and institutional action will be essential to ensure that access to these forms of leisure does not depend on where people live or on their social, cultural and economic resources.

Diverse and Digital Social Ties. People's social ties are likely to become more diverse, extensive and geographically dispersed. Smaller and more diverse families, greater geographical mobility and the growing role of digital communication will allow many relationships to be maintained across distances and through multiple technological channels. Ties based on friendship, communities built around shared interests and "chosen families" could play an increasingly important role in everyday life.

This transformation will not necessarily mean a loss of social ties, but it will change how they are maintained. Greater digital hyperconnectivity could go hand in hand with increased risks of unwanted loneliness and new inequalities in people's ability to care for others and sustain close relationships. The quality of these social networks will depend to a large extent on the time people have available, their social, cultural

and economic resources, and the availability of everyday spaces where people can meet and connect —in neighbourhoods, educational institutions, workplaces and local communities.

Making the Most of Travel Time. Making productive use of time is likely to become an increasingly important consideration in how people choose to travel. Modes of transport that allow people to use their journeys to work, rest, exercise or socialise will become particularly attractive, while the health implications of different options will increasingly shape transport choices for part of the population. In this context, the private car could lose some of its cultural prominence, although it will remain necessary in certain areas, particularly in rural or sparsely populated regions.

The pursuit of more efficient mobility —reducing wasted time, avoiding unnecessary journeys and making better use of time spent travelling— will be supported by the expansion of remote work, shared mobility, multimodal transport systems and improvements in public transport. By 2050, highly mobile lifestyles are also likely to coexist with others that are more rooted in the digital world, with many people alternating between the two. However, people's ability to access their preferred forms of transport will depend on where they live and the resources available to them, potentially widening some territorial inequalities.

Changing Ways of Eating. Changes in eating habits will go hand in hand with shifts in how people organise their time and with technological innovation. More flexible work and family schedules point towards meals becoming less synchronised, while the boundary between eating at home and eating out will become increasingly blurred. At the same time, interest in a more varied diet is likely to grow, with plant-based proteins playing a greater role alongside the continued consumption of meat and fish.

However, the extent to which these changes take hold will depend largely on food prices, access to fresh produce and households' socioeconomic circumstances. Innovation in food —from personalised nutrition to new forms of protein production— will broaden the range of options available, while domestic technologies and new digital services will make it easier to organise meals in new ways. In this context, diet quality could become an increasingly important source of social inequality, particularly among groups with limited time or fewer social, cultural and economic resources.

Living Longer, Living Better. By 2050, people in Spain are expected to live longer, but the quality of those additional years will depend on factors that are currently undergoing profound change. Shifting lifestyles are reshaping the landscape of health risks: smoking and alcohol consumption are declining, while obesity continues to rise and is particularly concentrated among the most vulnerable groups. Other challenges will also become increasingly prominent on the health agenda, including mental health, particularly among younger generations; the rise in allergies; the spread of vector-borne diseases driven by climate change; and antimicrobial resistance.

At the same time, medical and technological advances will open up new possibilities. Artificial intelligence (AI), genomic sequencing and cell therapies could transform the diagnosis and treatment of many diseases. The key question will be not so much whether these advances will arrive, but whether they will do so under conditions that ensure their benefits reach everyone equally.

Shared Care. Over the coming decades, demand for long-term care will gradually increase as life expectancy rises and the population ages. Smaller families, women's greater participation in the labour market and the growing geographical distance between generations will transform traditional patterns of care, making it necessary to think of care as an ecosystem involving families, public services, care professionals and support networks.

One of the main challenges will be to ensure that access to care does not depend on income or place of residence. This will require continued efforts to expand and modernise the public care system, improve working conditions in the sector and strengthen home care services. New technologies will be able to support care and help older people maintain their independence, but they are unlikely to replace the human and relational dimension that will remain essential to well-being in an increasingly long-lived society.

The final chapter of this report connects this foresight exercise with the development of sector-specific strategies that can support a gradual response to these transformations between now and the middle of the century. These recommendations complement the proposals already set out in previous reports, including *Spain 2050*, *Resilient EU 2030*, *HispanIA 2040* and *Spain and the Migration Challenge*.

Future Lives: Social Foresight in Spain

Future Lives is a social foresight exercise for Spain that combines quantitative evidence with the analysis of specialised studies and reports. It aims to identify some of the main trends transforming our society and to develop innovative courses of action to help us adapt to them.

The purpose of Future Lives is to understand how people's life trajectories and attitudes are changing, in order to anticipate what everyday life in Spain could look like in the years ahead and adapt the public policy framework accordingly[1]. The analysis draws on the available empirical evidence, scientific expertise and the comparative experience of countries that have already undergone, or are currently undergoing, similar changes and that share cultural, economic and labour-market conditions comparable to those Spain is expected to face in 2050.

Three Generations Across Three Moments in Time

This study examines the life choices of people in Spain at three different points in time and explores how these choices may evolve in the future. The analysis starts from the recognition of Spain's social diversity and the fact that, when faced with the same decision, people's responses can vary considerably depending on factors such as economic circumstances, where they live, their background or gender. The aim is to identify the major social transformations affecting the population as a whole, while recognising the diversity of trajectories and experiences that characterise Spanish society.

The report's main time horizon is 2050, in line with the Office's previous work. To make these transformations easier to understand, the report uses three generations as a common thread, capturing different stages of social change and the life course: the Baby Boom generation, born in the late 1960s; the Millennial generation, born in the late 1980s; and Generation Alpha, comprising those born around the second decade of the twenty-first century[2].

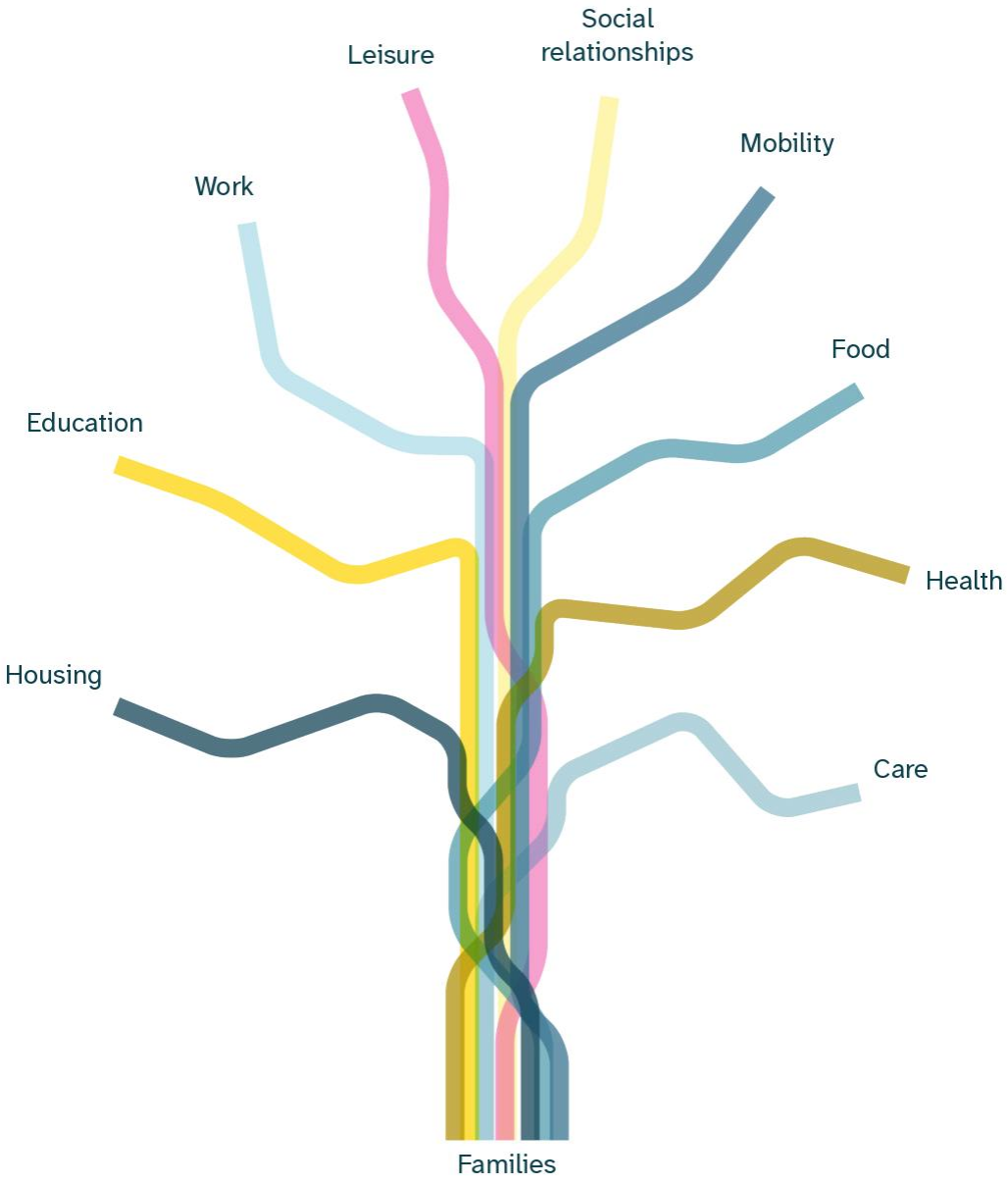
These generational reference points help place these transformations within different historical periods and show how life trajectories in Spain have changed over recent decades. While those born in the 1960s

reached adulthood in a context of strong economic growth and relatively stable family structures, subsequent generations have experienced longer transitions into adulthood, more fluid working lives and new ways of organising family and social life. Looking across these generations helps us understand how processes such as population ageing, digitalisation, changes in family life and the transformation of the labour market interact and, over time, shape the everyday choices people make.

The Dimensions of Life

We envision future lives through ten areas that capture our life trajectories and many of the decisions we make in our everyday lives [Fig. 1].

Fig. 1. The ten areas of analysis



In ***More Diverse Families***, we explore what couples and families may look like in the future, how birth rates may evolve and which factors will shape decisions about having children. ***Homes for Living Together*** examines how homes and neighbourhoods may adapt to new family structures and living arrangements. ***Schools in Transformation*** looks at early childhood education, changing approaches to learning and what schools could look like in 2050; ***Working to Live*** explores future labour-market dynamics and changing attitudes towards work; and ***Leisure Online and On Demand*** considers leisure preferences and the impact of technology on how people spend their free time.

In ***Diverse and Digital Social Ties***, we explore how demographic change may reshape family structures and the role that friendships and virtual communities will play in social relationships. ***Making the Most of Travel Time*** examines changing mobility patterns and the future of transport, while ***Changing Ways of Eating*** looks at what we may eat and how our eating habits could evolve. Finally, ***Living Longer, Living Better*** examines the factors that will shape our health over the coming decades, and ***Shared Care*** considers how care for older people may be organised in the future.

The ten areas that structure this report are all part of the same process of social transformation and cannot be understood in isolation. Decisions about family, education, work, housing, health and care are closely interconnected and together shape people's life trajectories. From this perspective, Future Lives aims to provide evidence that can help public policies adapt to these changes, giving people greater opportunities to pursue the lives they freely choose while preventing ongoing transformations from creating new inequalities.

How Has Spain Changed in Recent Decades?

To anticipate what lies ahead, we first need to look back. The major changes shaping our societies today did not emerge overnight. They are the result of decades of gradual transformation in how we live, relate to one another, work and consume. The sustained decline in birth rates, the rise of single-person households, women's large-scale entry into the labour market, population shifts towards cities and the arrival of digital technologies in everyday life are just some examples of processes that have been unfolding for decades and that, taken together, have profoundly reshaped our daily lives.

Future Lives draws on long-term trends and expert analysis across a wide range of social dynamics, from household formation and decisions about motherhood to where people live and how they consume, travel and relate to one another. Understanding these dynamics as a whole —where they come from, how they have evolved and how quickly they are changing— and connecting them to the effects of major transformations already under way, such as population ageing, migration, digitalisation and efforts to tackle climate change, is essential not only to understanding what lies ahead, but above all to identifying who will be affected and how that future will be experienced.

The data that follow illustrate some of the key dimensions of the profound transformation in everyday life that Spain has undergone over the past four decades[3]. Far from being isolated changes, they reflect deeper underlying trends that have reshaped life trajectories, living arrangements and people's expectations for their lives[4]. These long-term trends provide the foundation for the scenarios developed in this report. The future described in these pages is not an inevitable destination, but a set of plausible scenarios built on observed trends. How they evolve will depend to a large extent on the choices we make as a society over the coming decades.

Fig. 2. Spain's social transformation in indicators

Indicator	1980s 1990s	Latest available data
Mean age at first motherhood (years)	26	**31.5**
Number of children per woman of childbearing age	1.49	**1.12**
Married people (% of the population aged 30 to 34)	83%	**26%**
Births through assisted reproduction (% of total)	4%	**12%**
Divorces with children ending in joint custody (% of total)	18%	**48%**
Average number of people per household	3.4	**2.5**
Two-year-olds enrolled in education (% of total)	4%	**73%**
Foreign-born students (% of non-university students)	0.5%	**12%**
Mean age of the employed population (years)	39	**44**
Weekly hours of unpaid household work done by women	56	**43**
Young people who watch television daily (% of the population aged 18 to 24)	63%	**30%**
Daily social media use (minutes, people aged 16 to 64)	0	**115**
Number of relatives of women aged 30 to 34	22	**19**
Road passenger transport (kilometres per capita)	4,317	**8,239**
Meat consumption (kilograms per capita per year)	66	**41**
Consumption of ready meals (kilograms per capita per year)	7	**16**
Daily smokers (% of the population aged over 15)	38%	**20%**
Daily alcohol consumers (% of the population aged over 15)	18%	**13%**
Prevalence of obesity (% of the population aged over 15)	7%	**16%**
Percentage of foreign population	2%	**19%**
Same-sex unions*	83,600	**115,300**

*The earliest available data are from 2013. The figures represent the stock of same-sex couples, rather than an annual flow of new unions.

Source: Authors' own calculations based on publicly available data[5].

Over recent decades, our views of family, religion, women's role in society, sexuality and end-of-life choices have changed. Religious marriage has gone from being seen as an essential step before living together and starting a family to becoming a minority choice among most young people. Divorce, once widely frowned upon, has come to be recognised as the best option when a relationship is no longer fulfilling. Acceptance of homosexuality, which was heavily stigmatised in the past, has also increased significantly in Spanish society. Women, traditionally responsible for domestic and care work, have taken on an increasingly prominent role in the labour market, science and decision-making bodies. Attitudes towards death have also evolved, with a greater diversity of views and growing emphasis on quality of life in its final stages. Various sources indicate that Spain is one of the world's most tolerant countries and among the most advanced in recognising new social rights[6].

This transition towards a modern society has brought with it a wide range of views and preferences about how to approach some of the major milestones in our lives. Many young people choose not to marry or have children; growing numbers marry after having their first child and postpone living with a partner and becoming parents until after the age of 30. There are more single-parent families, more families living with children from previous relationships, more couples comprising people of Spanish and foreign nationality, and more people who consider their friends or pets to be part of their family. People move home more often, spend longer in education, and have more dynamic career paths, while technological advances and greater openness to the rest of the world have changed how we think about work, leisure, communication and personal relationships.

Many of these changes, some of which are still emerging and most visible among younger generations, are likely to become more significant in the future. Their development will be shaped by megatrends such as population ageing, the climate threat and the emergence of new technologies. By 2050, people will live longer and, supported by public policies, also enjoy better health.

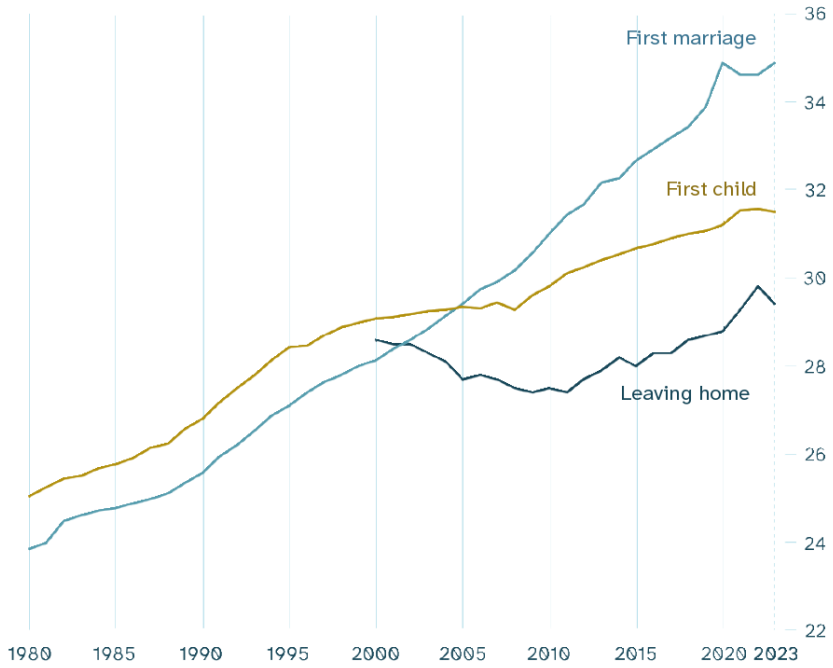
Did you know that in Spain...?

- Today, as many children are born to unmarried mothers as to married mothers, compared with less than 5% of all births in the 1980s.
- Only 52% of young people aged 30 to 34 live with a partner, compared with 83% in the 1980s.
- We also move home more often: in the 1980s, almost 70% of the population had lived in the same home for at least 10 years, compared with 40% today.
- Between 2013 and 2020, the number of same-sex couples increased by 38%.
- One in three households now consists of just one person, compared with only 13% of households in the 1980s.
- 73% of two-year-olds are enrolled in education, compared with less than 5% in the 1980s.
- 19% of people living in Spain were born abroad, four times the share in 2002. Nearly half were born in Latin America and one quarter in Europe.
- In 1991, only 16% of young people had completed higher education, compared with 52% today.
- Women spend 43 hours a week on household work, 13 hours fewer than in the 1980s.
- The percentage of people aged over 65 with at least one child living within 1 km has fallen from 55% in 2004 to around 12% in 2017.

More Diverse Families

For decades, marrying before the age of 25, living with a partner and having a first child soon afterwards was the most common life trajectory in Spain. Today, as in most Western countries, growing numbers of people are choosing not to marry or have children, births outside marriage are becoming more common, and both partnership formation and parenthood are being progressively delayed. Life trajectories and ways of forming a family are becoming increasingly diverse [Fig. 3].[7]

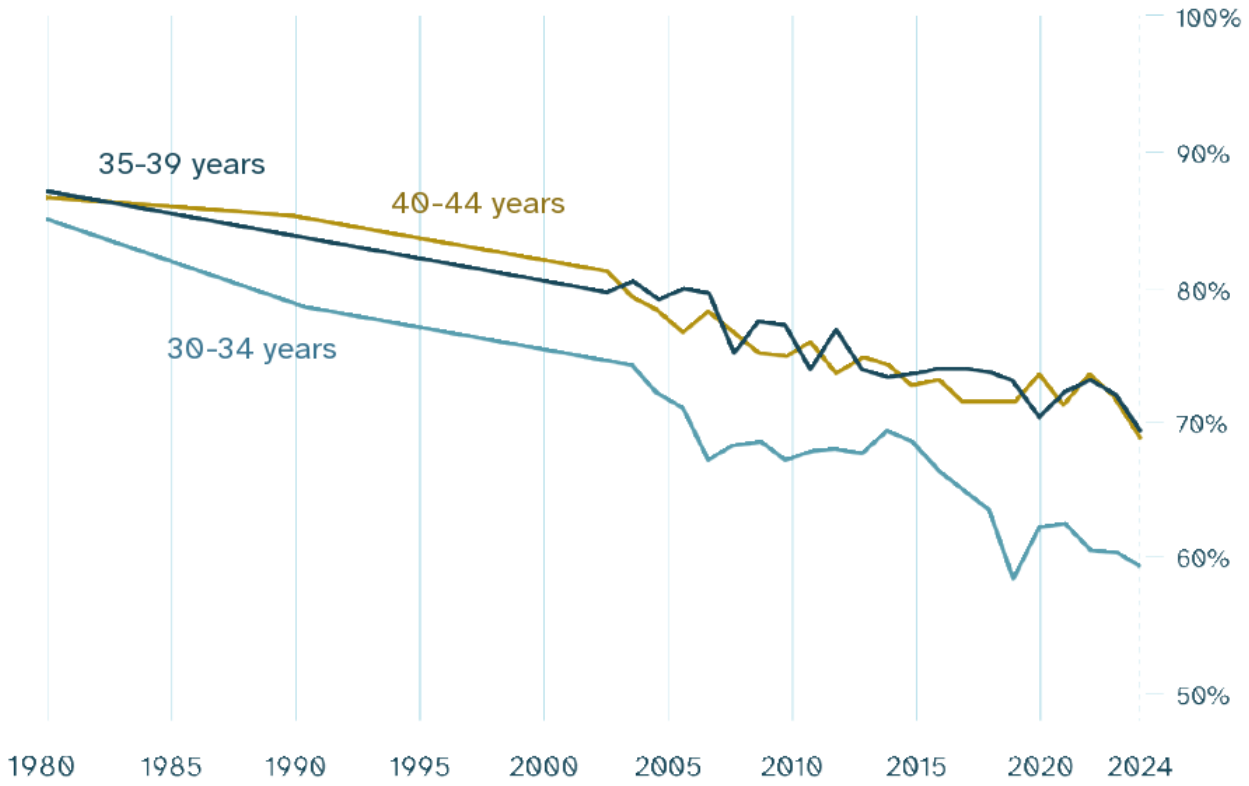
Fig. 3. Key ages in the family formation process in Spain



Source: Authors' own calculations based on Eurostat and INE[8].

By 2050, most people will continue to be in a relationship, although relationships will take increasingly diverse forms. The idea of a couple has gradually moved away from rigid and permanent models, with greater emphasis placed on emotional connection and personal fulfilment. At the same time, stable relationships are likely to become partly decoupled from living together. In 2024, only 59% of women aged 30 to 34 lived with a stable partner, compared with 85% in the 1980s [Fig. 4].[9] In the future, many couples who do not live together could become an established form of relationship, allowing people to preserve greater personal autonomy without giving up emotional commitment.

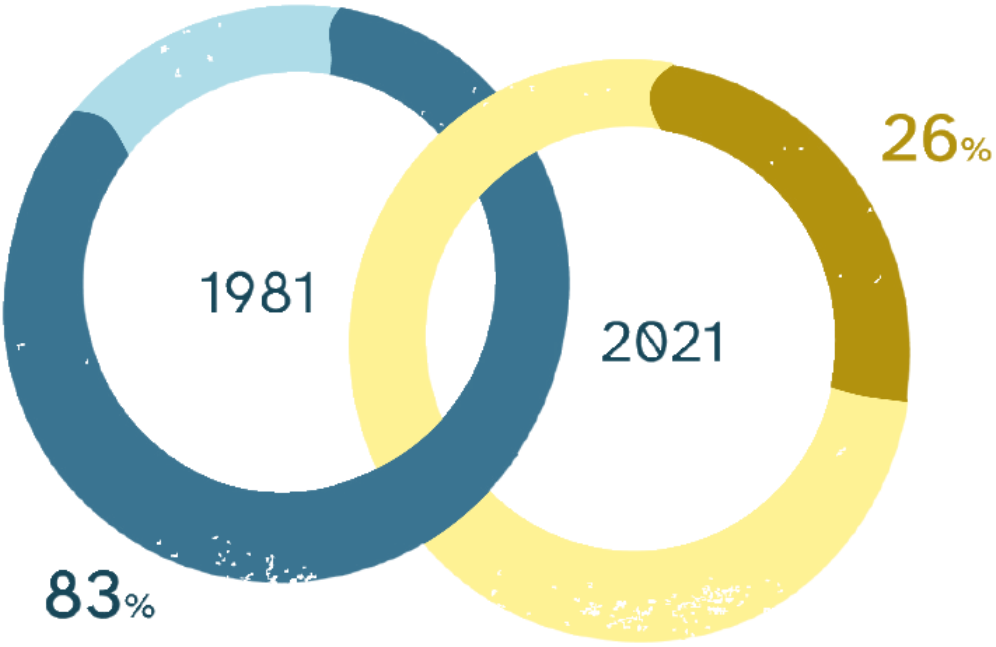
Fig. 4. Percentage of Spanish women living with a stable partner



Source: Authors' own calculations based on INE[10].

Young people in 2050 are also likely to continue delaying marriage and to marry less frequently than in previous decades. The shift is already visible: in 2023, only 37% of women aged 30 to 34 were married, compared with 85% in the early 1980s, and half of all births occurred outside marriage. The legalisation of divorce in 1981 and the 2005 reform that streamlined the process contributed decisively to this shift in attitudes towards marriage and living together[11]. At the same time, the formalisation of relationships will increasingly reflect a wider range of circumstances: between 2013 and 2020, the number of same-sex couples increased by 38%, while mixed-nationality couples, comprising one person with Spanish nationality and one with foreign nationality, increased by 11%[12].

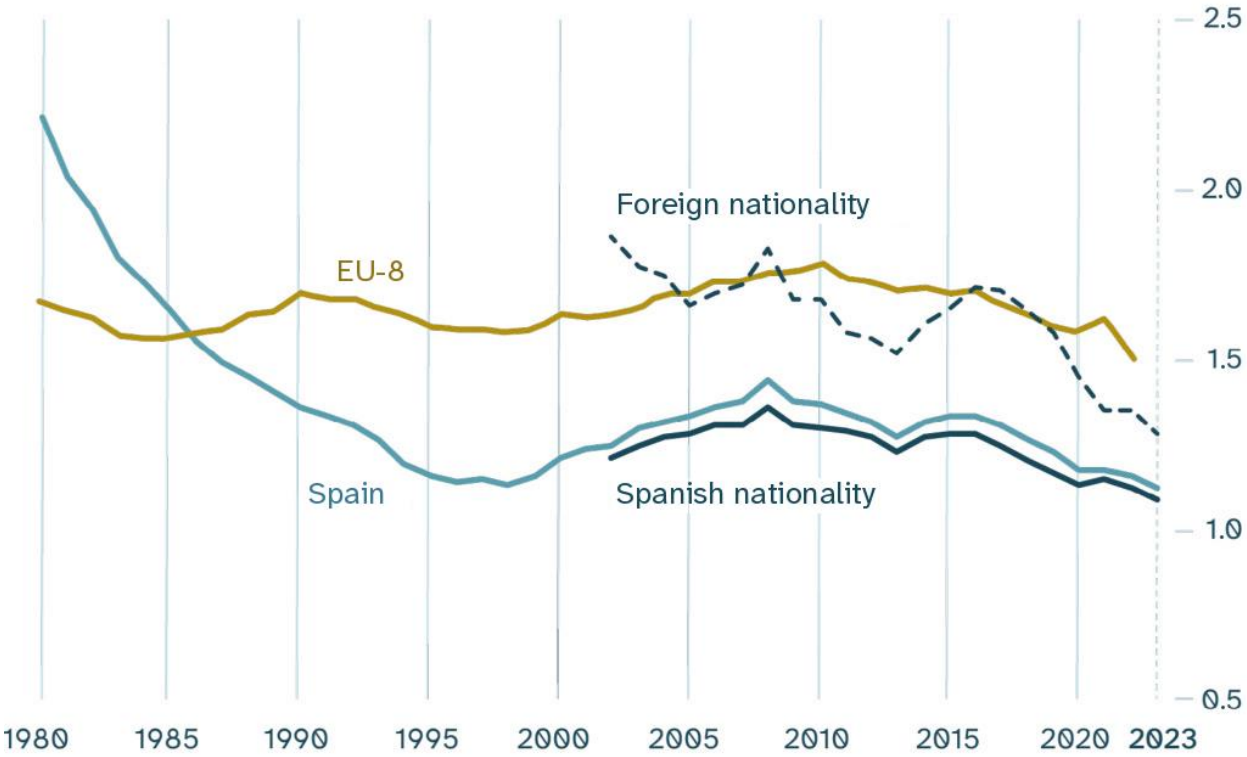
People aged 30 to 34 who are married (% of total)



Source: Authors' own calculations based on INE.

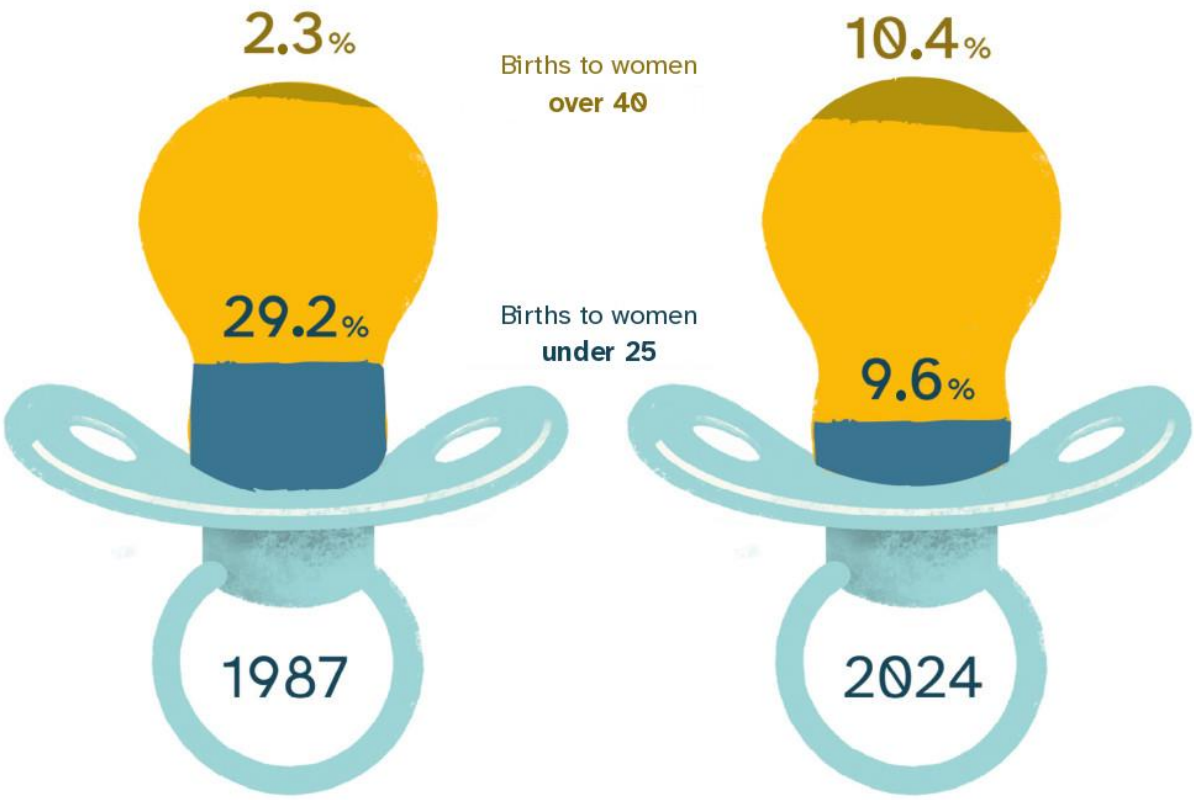
The decline in birth rates and the postponement of motherhood observed over recent decades could continue if current trends persist. According to INE projections, by 2050 women will have an average of 1.29 children and will become mothers for the first time at around the age of 32. These figures are very similar to current levels, but far removed from the 1980s, when it was common to have two children and to have them before the age of 25 [Fig. 5].[13] Behind this decline lie profound changes in preferences, lifestyles and family structures.

Fig. 5. Fertility rate in Spain (number of children per woman of reproductive age, 15 to 49 years)



Source: Authors' own calculations based on INE, Human Fertility Database and Eurostat[14].

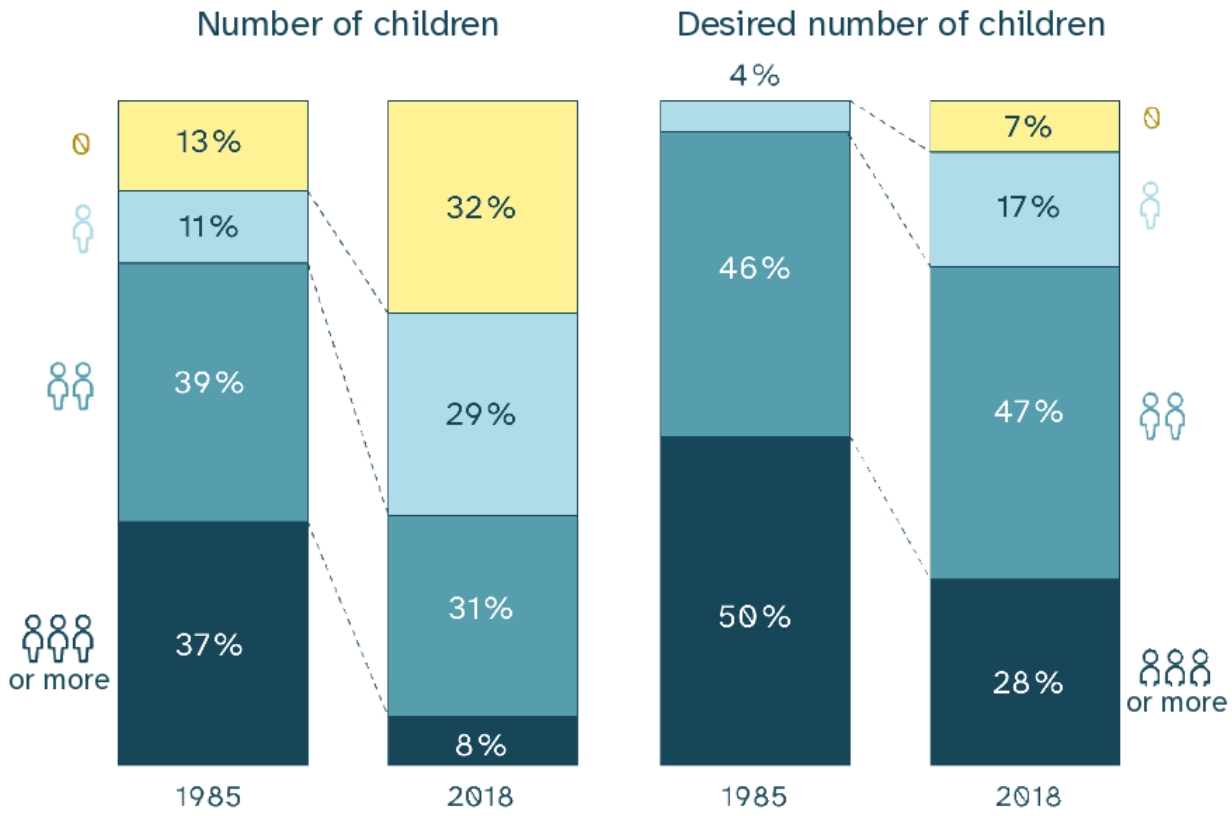
Births to women under 25 and over 40 (% of total)



Source: Authors' own calculations based on INE.

In the late 1980s, most women hoped to have two or more children, while very few considered having only one. Today, by contrast, larger families are less widely desired, and preferring to have just one child or even no children at all is becoming increasingly common [Fig. 6]. Motherhood is also being postponed: while in 1987 three in ten births were to mothers under the age of 25, by 2024 this proportion had fallen to one in ten[15]. Low fertility and the postponement of motherhood are not unique to Spain. They can also be observed in countries with better conditions for work-life balance and greater gender equality, such as Denmark, Finland and Sweden.[16] This does not mean, however, that their future trajectory is predetermined. The gap between the number of children people would like to have and the number they ultimately have depends to a large extent on the material conditions in which they pursue their plans for family life and, therefore, on the scope of policies supporting childrearing, work-life balance, access to housing and assisted reproduction [see Front 2 of Action Strategies for Future Lives].

Fig. 6. Motherhood decisions of Spanish women aged 35 to 39



Source: Authors' own calculations based on INE.[17]

As a result, family models that include neither fatherhood nor motherhood will also become more established. Although having children will remain an important aspiration for many people, a growing number of life plans will unfold outside parenthood.[18] In 2000, the proportion of women reaching the age of 40 without children was 10.8%, whereas by 2023 this figure had risen to 28.6%. Couples who, despite being financially well-off, chose not to have children (DINK couples, or Dual Income No Kids) were also becoming more common.[19] This decision is influenced by changes in how parenthood is understood — increasingly linked to time, co-responsibility and personal involvement— together with economic and environmental considerations that also weigh on life decisions. Alongside the rise in childless households, more diverse family models, such as blended families, could also become more widespread.[20]

For some people, the feeling of not having found the right partner could become one of the reasons for not having children.[21] The growing divergence in values and ideological orientations between young men and women, together with job and economic instability, may make it harder to form and consolidate relationships and may favour stable relationships without living together. As early as 2018, 17% of women aged 30 to 34 who had a partner did not live with them.[22] Continued progress in conditions that make it easier to pursue family plans, such as access to affordable housing or better work-life balance, could help reduce some of these barriers. At the same time, the growing use of assisted reproduction techniques, already involved in 12% of births in 2024, could help narrow part of the gap between desired and actual motherhood [see Front 2 of Action Strategies for Future Lives].[23]

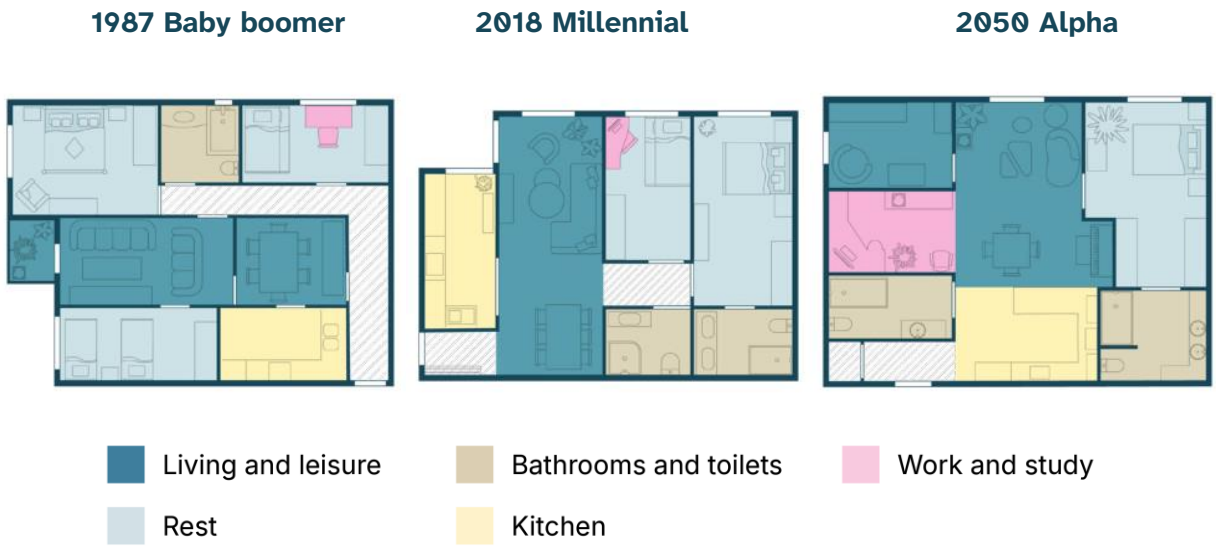
Overall, family formation in 2050 is likely to be more diverse, later and more flexible than it was for previous generations. Two distinct dynamics underpin this transformation and should not be conflated: on the one hand, greater freedom to decide when, how and with whom to form a family; on the other, the persistence of barriers that make it difficult for many people to pursue the family life they want. Future fertility trends will depend in part on the ability to continue narrowing the gap between the number of children people would like to have and the number they ultimately have, by creating conditions that make it easier to form a family and raise children.

Homes for Living Together

By 2050, households will be smaller and more diverse, and housing will evolve alongside them: becoming more flexible and more closely connected to shared spaces within buildings and neighbourhoods. According to INE projections, single-person households will become the most common type of household from 2028 onwards, while average household size will continue to decline over the coming decades. In 2023, the average household in Spain consisted of 2.45 people, while the average home had a floor area of around 86 square metres. In the 1980s, by contrast, most households consisted of more than three people and lived in three-bedroom homes with a floor area of around 75 square metres.[24]

Homes of the future will have fewer bedrooms and more flexible layouts. Spaces that can adapt to different everyday needs will become more prominent, combining open areas with more private ones. In homes shared by people who are not related, greater separation between spaces could help preserve autonomy and privacy, while in other cases shared spaces and multipurpose rooms will become more important. Shared areas within residential developments, designed for everyday activities, socialising or work, could also become more common[25] [Fig. 7].[25]

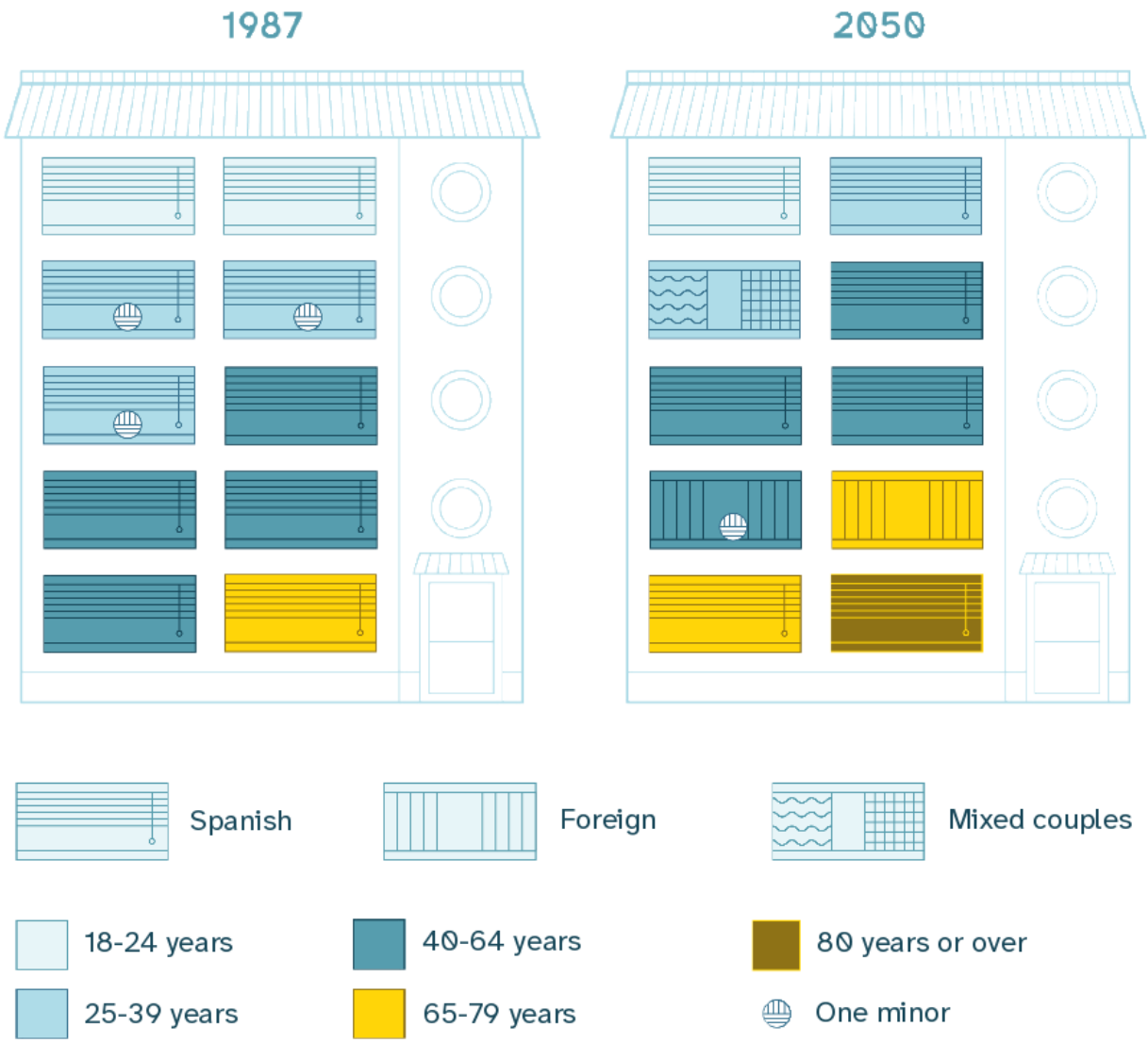
Fig. 7. Floor plan of a representative family home for each generation



Source: Authors' own calculations.

Neighbourhoods in 2050 will also be more diverse, with higher levels of residential turnover. The same building will be home to older people, people living alone and groups of young people sharing a home, and as many as half of these households could have pets[26] [Fig. 8].[26] Greater labour mobility, the growing importance of renting and changes in family structures will lead people to spend shorter periods in the same home, with implications for neighbourhood social cohesion and the emergence of unwanted loneliness[27] [see Working to Live, More Diverse Families and Diverse and Digital Social Ties].[27] This greater residential mobility is already part of everyday life: in 2021, only 36% of Spain's population lived in the same home as ten years earlier, compared with nearly 70% in the 1990s.[28] This trend reflects different realities: greater mobility associated with increasingly fluid educational, employment and family trajectories, alongside situations in which moving home is driven by difficulties in accessing or remaining in housing.

Fig. 8. Example of a representative residential building for each generation



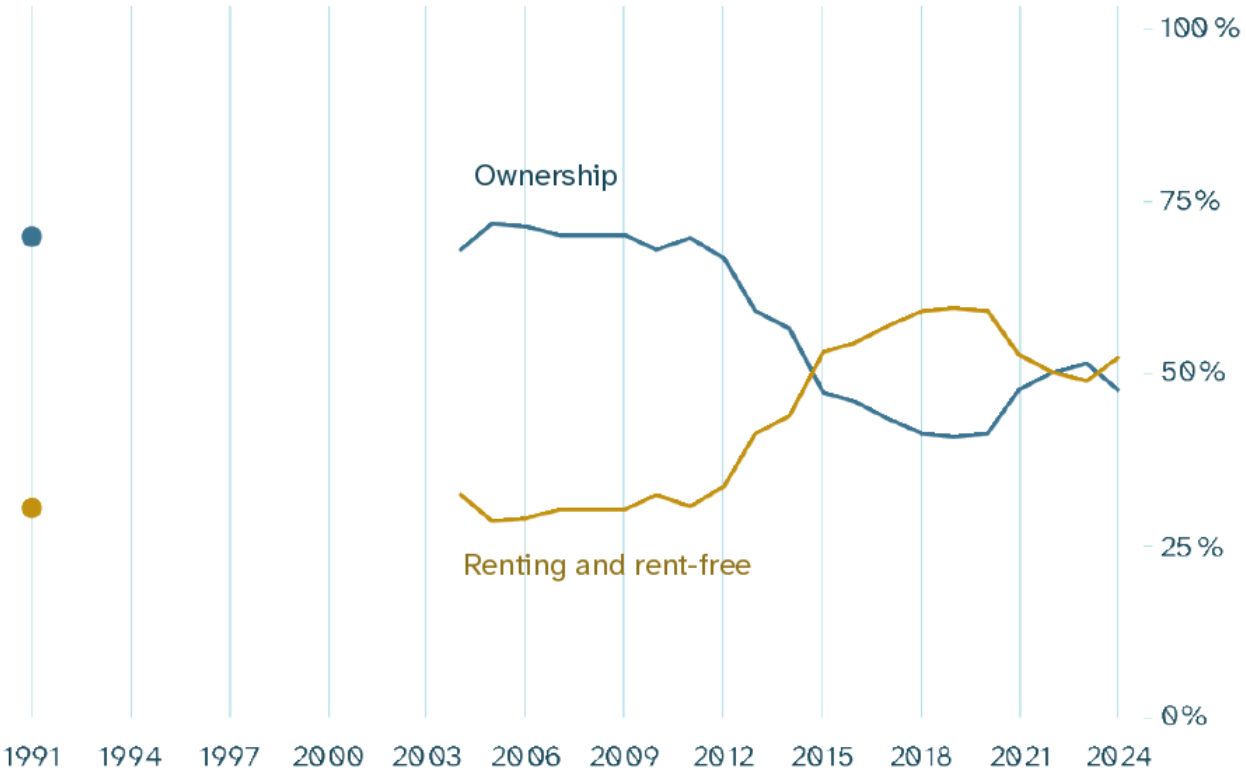
Source: Authors' own calculations based on INE.[29]

Large metropolitan areas are likely to account for much of this residential transformation. According to INE projections, Madrid, the Mediterranean coast and Spain's two island regions will continue to attract young people by concentrating educational and employment opportunities. By 2050, cities with more than 300,000 inhabitants are estimated to account for up to 45% of Spain's population, six percentage points more than in 2020. Urban concentration was already evident in 2021, when less than 19% of people aged 30 to 34 lived in small municipalities, compared with nearly 30% in the 1980s.[30] The territorial divide between urban and rural areas could therefore widen, with a growing concentration of young people in large cities and a gradual loss of population in many small municipalities.

Access to housing will remain closely linked to employment stability, partnership formation and family support.[31] Renting will become established as a main route into independent living, in line with trends over the past decade[32] [Fig. 9].[32] When their economic and personal circumstances allow, many people will opt for homeownership, which will remain the preferred option.[33] How these trends evolve will

also depend on the ability to continue expanding access to housing and to adapt housing policies to the needs of a population with increasingly diverse life trajectories.

Fig. 9. Housing tenure among young households (people aged 30 to 34) in Spain



Source: Authors' own calculations based on INE.[34]

Finally, some trends point towards a greater diversity of housing options. On the one hand, medium-sized cities could become an increasingly attractive alternative to large metropolitan areas in response to demographic pressures and high housing costs, supported by the expansion of remote work, greater flexibility in working arrangements, improvements in transport and growing interest in places with a better climate and more green spaces. On the other hand, the generational turnover of the Baby Boom generation, whose homeownership rate is around 90%, will increase the supply of housing available, both as second homes become primary residences and as inheritances release additional financial resources.[35] This could be accompanied by growth in collaborative housing projects, an intermediate model between renting and homeownership that could gain ground among people seeking access to housing on better terms.[36]

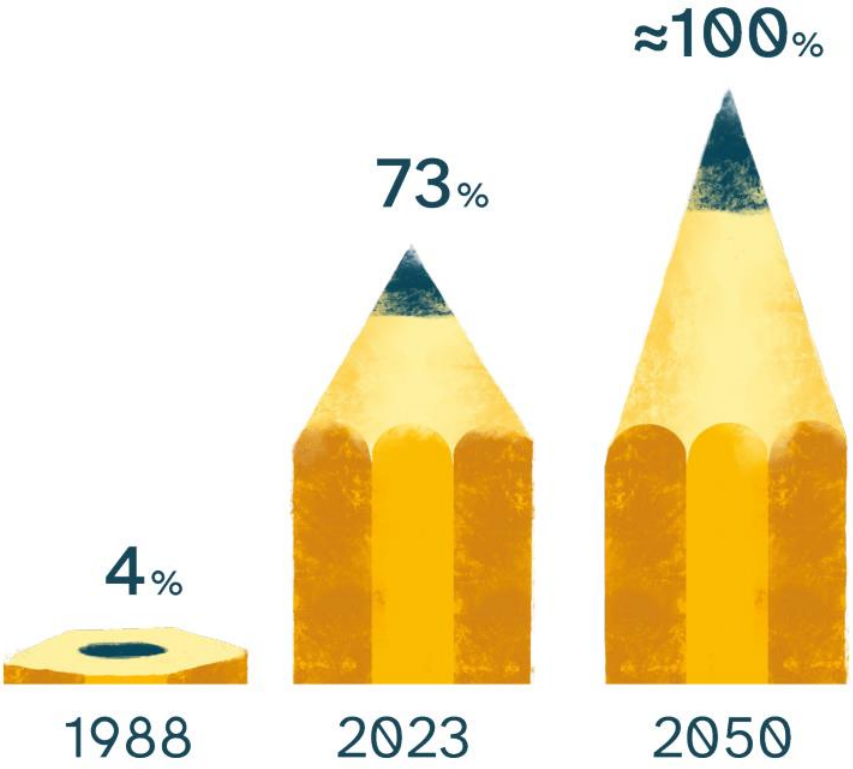
The housing of the future will reflect a more diverse and mobile society with less linear life trajectories. How this transformation unfolds will depend not only on demographic and technological change, but also on the ability to continue adapting housing policies to these new realities. In this context, ensuring access to adequate housing will remain a fundamental condition for enabling people to pursue their life plans independently and with equal opportunities.

Schools in Transformation

By 2050, enrolment in early childhood education at age two could reach levels in Spain similar to those currently seen in countries such as Sweden, Norway and Denmark, with nine in ten children enrolled. This development will be made possible by the continued expansion of public early childhood education provision begun in recent years and by growing recognition of this stage as a key element in supporting work-life balance, equal opportunities and child development.[37] As early as 2023, 73% of two-year-olds were enrolled in education, a far higher proportion than in previous decades, when women's lower labour-force participation and men's limited involvement in care meant that childcare was largely provided by mothers, grandmothers or other female relatives until the age of three.[38]

During the first year of life, childcare will continue to be provided primarily within the family. Enrolment at this stage has increased gradually but steadily, rising by seven percentage points since 2010 to reach 16%, and is expected to continue growing without displacing the home as the main childcare setting.[39]

Projected share of two-year-old children enrolled in education (% of total)



Source: Authors' own calculations based on the Ministry of Education, Vocational Training and Sports.

Early childcare arrangements will continue to diversify, against a backdrop of changes that are already under way, such as equal parental leave for both parents, a more balanced sharing of care responsibilities, and the expansion of early childhood education and care services. The growing use of household technologies, together with the partial outsourcing of care and domestic work, could help ease the day-to-day burden on some households without replacing direct parental care. Even so, households' ability to provide this care will depend on factors such as job stability, income, access to remote work, the strength of support networks, and the availability of affordable, high-quality childcare services.[40]

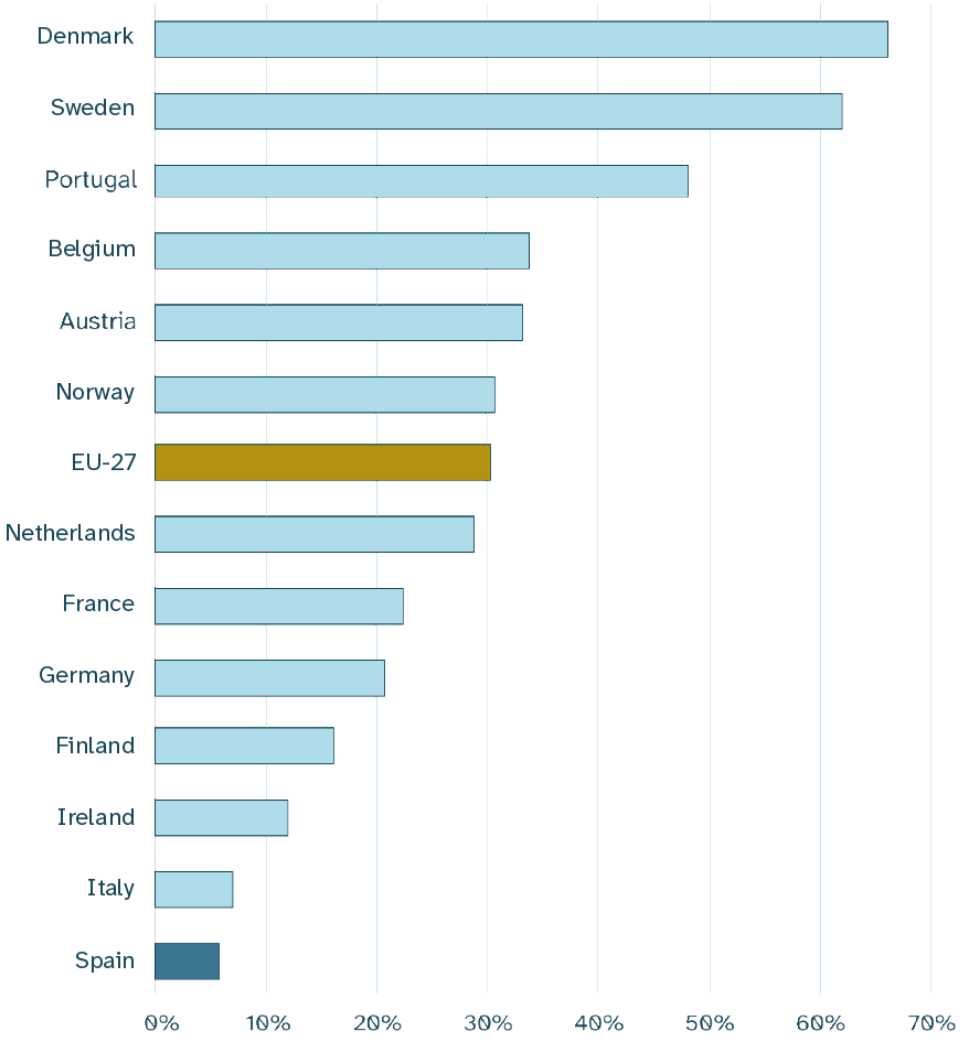
In the schools of the future, learning will become more active, creative and collaborative, building on a transformation that is already under way across the education system. This approach will place greater emphasis on cross-cutting skills, the organisation of the school day, and recognition of children's right to rest and play.[41] Memorisation, lectures and individual assignments, which featured prominently in the education of previous generations, will gradually give way to more active and interdisciplinary forms of learning. Skills such as creativity, communication and teamwork will become increasingly valuable both within and beyond the education system, establishing themselves as key skills for personal and professional development.[42]

Extracurricular activities will play a key role in developing the skills of the future and will be an important tool for closing educational gaps.[43] Today, children in Spain participate less than those in countries such as Finland, Sweden and the Netherlands in extracurricular activities related to art, music or

team sports [Fig. 10]. These activities help children develop interests, skills and hobbies that can stay with them and enrich their leisure time throughout their lives.

At the same time, the growing importance of educational activities outside school hours raises new challenges for equity, as access continues to be shaped by parents' education, household income and family background, while in some cases also reinforcing gender stereotypes. In this context, continuing to expand access to affordable extracurricular activities through the education system and strengthening public educational leisure programmes, such as Tardes con Plan, could help reduce these inequalities. These efforts will also need to preserve enough time for play, enjoyment and rest away from screens.[44]

Fig. 10. Participation in extracurricular activities at school, 2019 (children aged 6–11, % of total)



Source: Authors' own calculations based on OECD data.[45]

In this context, learning could extend beyond regular school hours, with schools becoming increasingly open and connected to their local communities. Schools could incorporate libraries, shared

spaces and extracurricular activities within their facilities, while classrooms and playgrounds could be redesigned to encourage teamwork, experimentation and outdoor learning. With more flexible spaces that are better adapted to the effects of climate change, schools could help build intergenerational connections, expand learning opportunities and, when needed, serve as climate shelters during extreme weather events.[46]

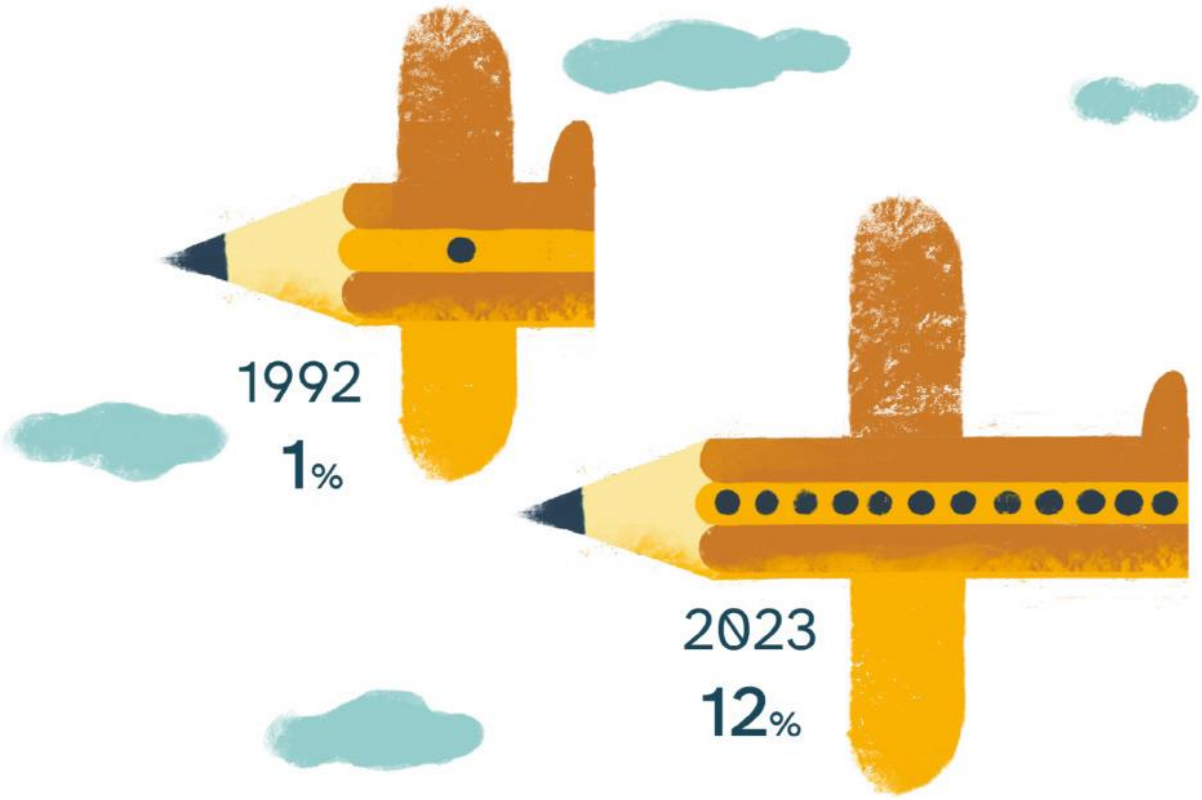
As in other areas of everyday life, AI could reshape education, opening up new opportunities for learning. These include more personalised teaching, with content, pace and methods tailored to the needs of each student—an ambition with a long history in education that these tools could bring closer to everyday practice.[47] AI tools could also take on some monitoring and lesson-preparation tasks, freeing up teachers' time to focus more on guidance, individual support and direct engagement with students.[48]

A planned and responsible integration of AI into schools will require sustained support from public policy, as its use in education is not without risks. These range from uncertainty about how AI itself will evolve and structural challenges such as unequal access and potential biases in these systems, to the normalisation of constant hyperconnectivity, which could contribute to overstimulation, make self-regulation more difficult, and undermine both emotional well-being and learning. Intensive and highly individualised use could also erode the spaces for interaction and socialisation that have historically been an essential part of the educational experience. As a result, the human relationship between teachers and students, which is central to cognitive and emotional development, could gradually be displaced.[49]

By 2050, classrooms will reflect growing social and family diversity, in terms of both cultural origins and family structures. The foreign-born population has risen from barely 2% in the early 1990s to 20% today, and projections suggest that, if this trend continues, almost one in five schoolchildren will have been born outside Spain by 2050.[50] At the same time, the diversity of families—blended families, single-parent families, families with two mothers or two fathers, etc.—will continue to grow, shaping an increasingly plural domestic reality [see More Diverse Families]. Managed with the appropriate resources and training, this plurality is a valuable asset for learning and living together. Making the most of its potential will depend on distributing it evenly across schools, and progress in this direction will remain a key area of public policy to strengthen the equalising role of the education system.

Responding to these changes will require sustained public support for the teaching profession. The challenges are wide-ranging, from administrative workloads and growing diversity in the classroom to the difficulty of meeting the needs of students with very different learning requirements.[51] Addressing them will require continued investment in resources, stronger teaching and school leadership teams, and greater opportunities for professional development and career progression.[52] In this context, integrating AI tools, always with human oversight, could help ease some of these pressures by automating routine tasks and supporting more personalised teaching, freeing up time for teachers to focus on their core educational role. Raising the status and strengthening the teaching profession will be essential to attract and retain talent and adapt teachers' roles to new educational demands.[53]

Evolution of the share of foreign-born students in non-university education

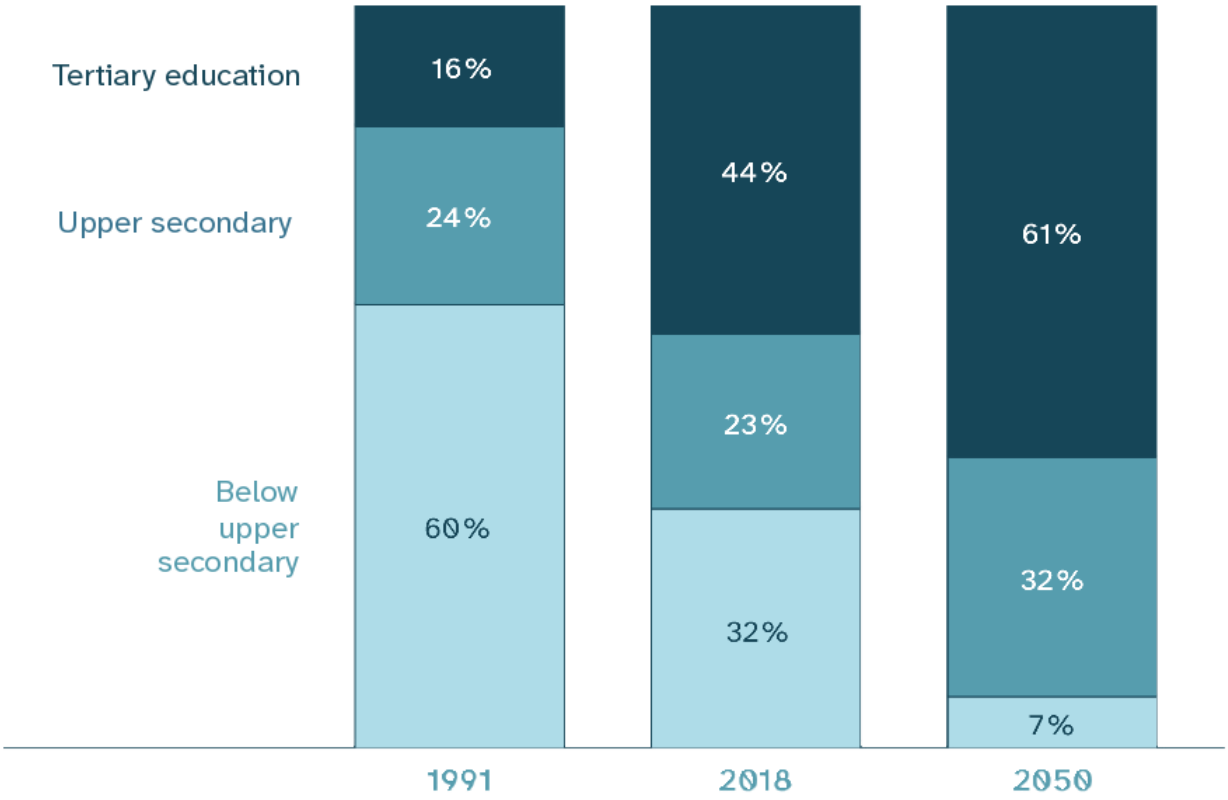


Source: Authors' own calculations based on data from the Ministry of Education, Vocational Training and Sports.[54]

Working to Live

By 2050, completing tertiary education will remain the most common educational pathway. If the trend observed over recent decades continues, at least 5 in 10 young people will enter the labour market with a university degree or higher vocational qualification.[55] Early school leaving is also expected to fall below the EU's current average of 9.1% by 2050 if recent trends continue, while the share of 25- to 34-year-olds with low levels of education will continue to decline. In the late 1980s, this figure stood at over 50%, and it was common to start working shortly after completing compulsory basic education (EGB), which ended at age 14[56] [Fig. 11] [see Schools in Transformation].[56]

Fig. 11. Projected educational attainment of young people in Spain by generation (25–34-year-olds, % of total)

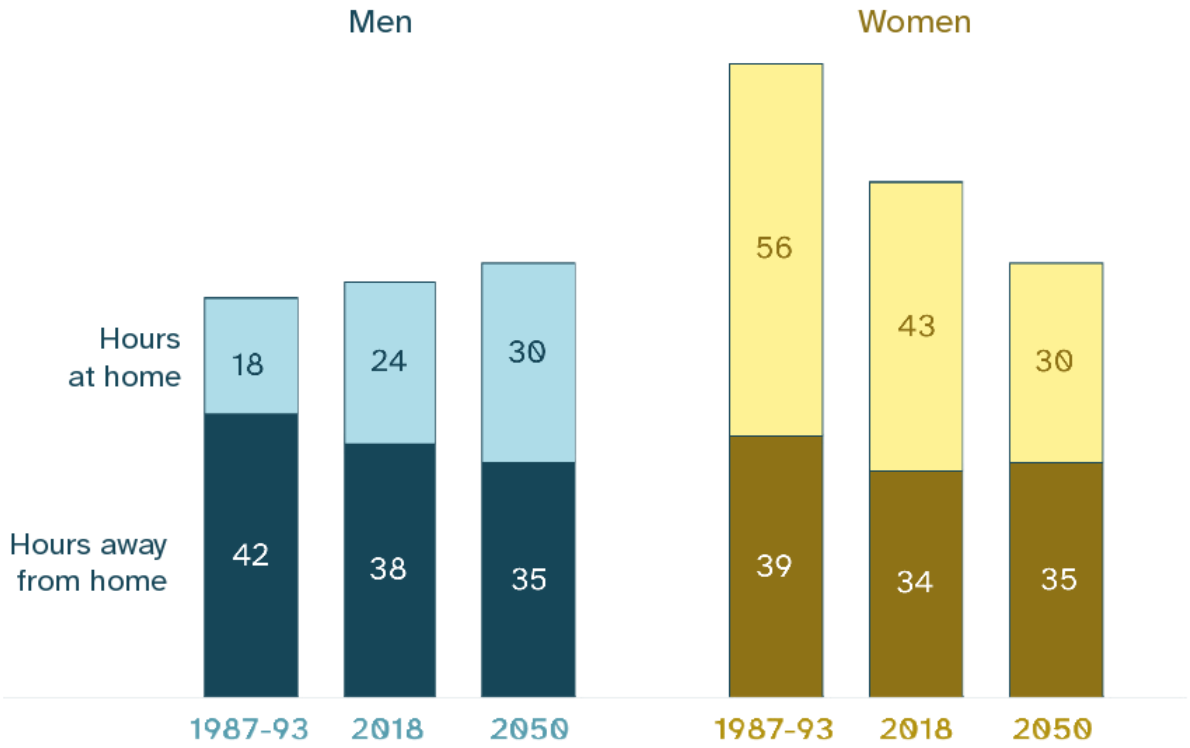


Source: Authors' own calculations based on Eurostat and OECD data.[57]

Young people in 2050 could enter a labour market with higher employment rates and greater flexibility than today. If the trends observed in recent decades continue, the employment rate among 30- to 34-year-olds could reach around 85%, compared with 78% in 2024. At the same time, 40-hour working weeks could give way to arrangements closer to 35 hours, with four-day weeks, continuous working hours and more flexible ways of organising working time becoming more common.[58] The extent of this transformation will depend largely on the ability to continue improving job quality, building on progress in areas such as job stability, work-life balance and the organisation of working time.

At the same time, the gender employment gap among young people could narrow, with similar employment rates among men and women aged 30 to 34. This trend could be supported by a gradual reduction in the burden of unpaid domestic and care work carried by women, who by 2050 could spend up to 13 fewer hours a week on these tasks than their mothers and 26 fewer than their grandmothers[59] [Fig. 12].[59] In this context, further reducing the employment penalty associated with motherhood could help narrow the gender pay gap even further.[60] These overall improvements will vary across economic sectors and will also be shaped by socioeconomic inequalities among young people themselves.[61]

Fig. 12. Projected weekly hours of work inside and outside the home



Source: Authors' own calculations based on Eurostat, the Institute for Women, and the "la Caixa" Observatory.

The rollout of technologies such as AI will profoundly transform the labour market. On the one hand, their adoption could boost productivity and free workers from routine tasks, allowing them to devote more time to roles where human presence and qualities are irreplaceable.[62] On the other, it brings risks such as the platformisation of work and the spread of algorithm-driven forms of work organisation, which could erode working conditions.[63] In both cases, skills and adaptability will become increasingly valuable. Workers who are able to integrate AI tools into their work and use them to enhance their professional skills will have a significant advantage in a changing labour market. These new technologies will also transform workplaces. In supermarkets or hotels, for example, it may become common to be served by remotely supervised AI avatars.[64]

The workforce of the future will be more diverse. By 2050, more than a quarter of workers will be aged between 55 and 69, according to projections by Spain's National Statistics Institute (INE), and Spain will continue to need foreign-born workers to fill jobs in sectors such as healthcare, care services, hospitality, construction and agriculture.[65] This shift in the composition of the workforce is already visible today: the average age of workers rose from 39 in 2002 to 44 in 2024. At the same time, the number of digital nomads has grown rapidly in Spain.[66] Workplaces that foster cultural, gender and generational diversity will be better placed to make the most of the opportunities that a more diverse workforce can bring.[67]

Average age of the employed population (years)



Source: Authors' own calculations based on INE data.

In this scenario, workplaces will increasingly adapt. While many people will continue to commute to offices, factories or shops, a growing number will work remotely from home, a holiday destination or a coworking space.[68] Remote and hybrid working arrangements are therefore likely to continue expanding wherever physical presence is less essential, although their uptake will remain more limited in sectors that depend more heavily on on-site work and fixed shifts.[69] This greater flexibility could, however, also blur the boundaries between work and personal life and create new risks associated with technostress.[70] The impact of climate change on working conditions will also be uneven. In jobs carried out outdoors, working hours, breaks and heat protection measures will increasingly need to be adapted, building on recent advances in occupational health and safety.[71]

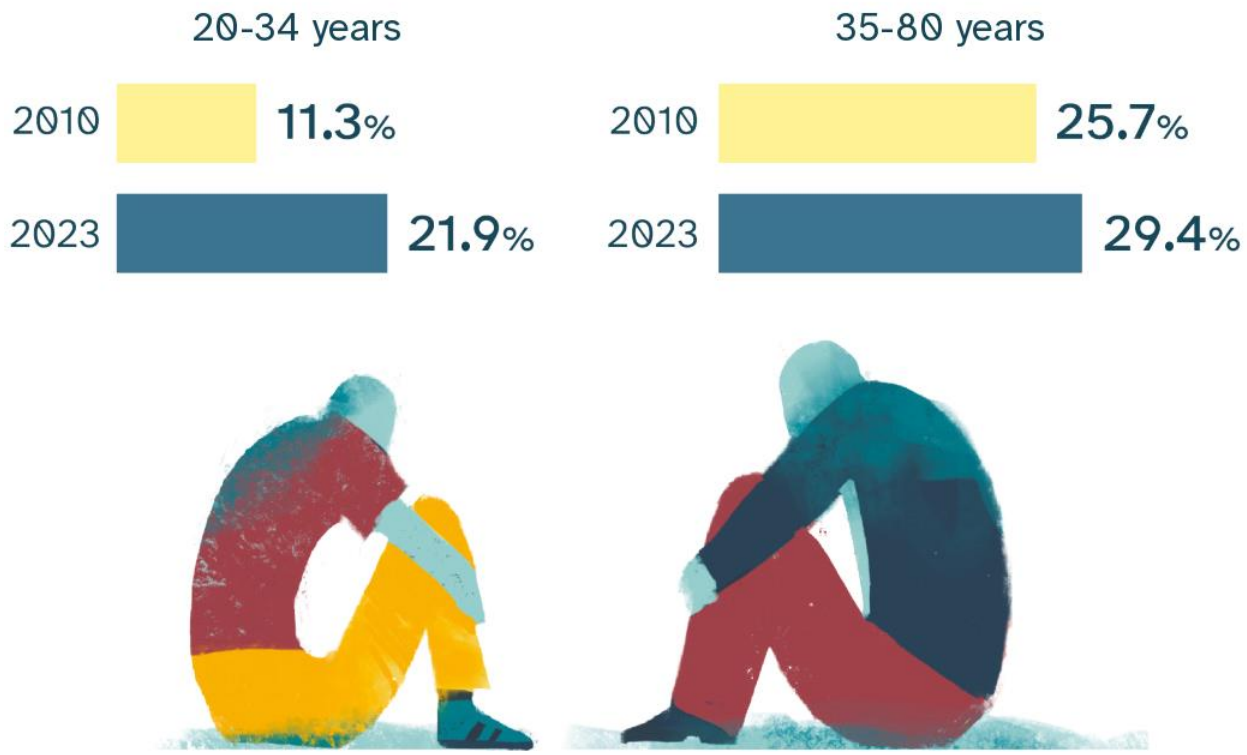
Finally, career paths could also become more flexible. It may become common to change jobs several times, alternate periods of work and training and, in some cases, take short career breaks without having to wait until retirement. However, these options will not be available to everyone: they may be more common among people with greater job security or higher levels of skills and qualifications, while remaining difficult to sustain for those in more precarious employment.

Leisure Online and On Demand

Leisure will play an increasingly central role in everyday life and in how people perceive their well-being.[72] Future generations may have more free time thanks to shorter working hours, a more equal sharing of work and care responsibilities, and technological advances that will make many everyday tasks more efficient. However, having more free time will not necessarily translate into higher levels of well-being.

By 2050, algorithms are likely to be increasingly capable of anticipating and shaping each person's preferences, habits and patterns of attention.[73] The recommendation systems that mediate access to digital entertainment will continue to become more sophisticated, creating increasingly personalised experiences that are difficult to share. It could become common for people living in the same household to consume different content, at different times and in different settings, through immersive platforms, with few shared points of reference.[74] Understanding how algorithms shape everyday experience and having greater transparency about how they work will become increasingly important [see Front 1 of Action Strategies for Future Lives].

People who do not socialise at least once a week, by age group (% of total)

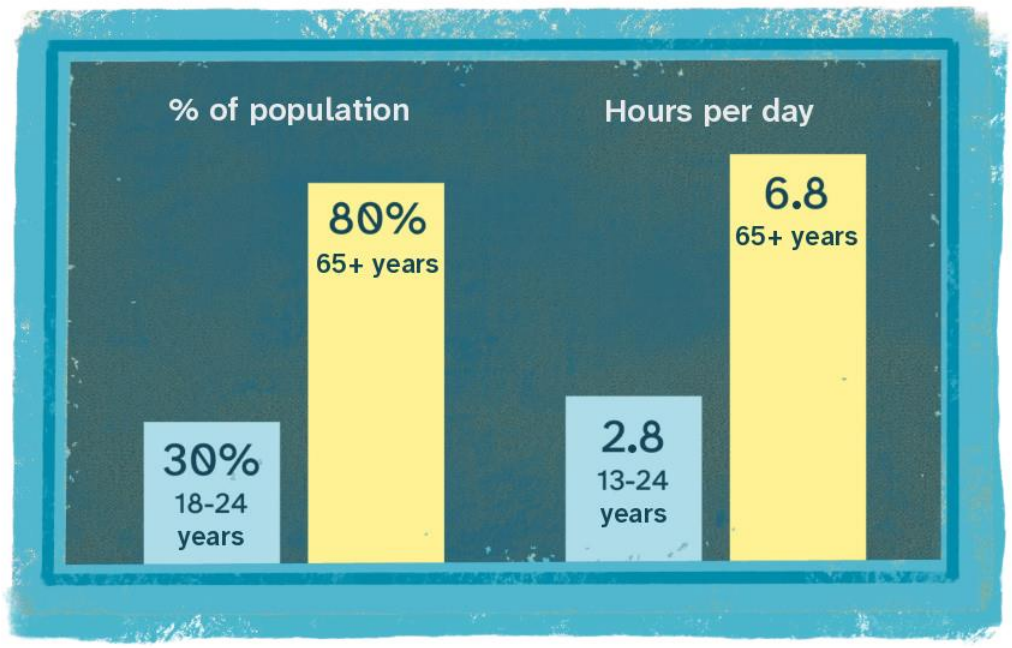


Source: Authors' own calculations based on the European Social Survey.

This hyper-personalisation will not represent a break with the past, but rather an intensification of trends that are already visible. **Individual and on-demand consumption has gradually displaced forms of leisure based on shared schedules and spaces.** The shift is particularly visible among children and adolescents: children under 13 spend only around 15% of their leisure time playing outdoors, seven in ten have a mobile phone before the age of 15, and most exceed recommended screen-time limits. Video gaming is increasingly widespread and begins at younger ages, with interactions becoming more online and personalised.[75] At the same time, some traditional forms of face-to-face socialising also appear to be weakening among young adults: between 2010 and 2023, the share of 20- to 34-year-olds who did not socialise at least once a week doubled.[76]

Traditional ways of accessing information and entertainment will tend to lose ground to more personalised digital platforms. Streaming platforms, now accessible to more than 60% of the population, have gradually displaced traditional television viewing at home. Today, almost half of the population gets news through social media, and a growing number through podcasts, whereas in the 1990s most people relied primarily on television, radio or print newspapers[77] [Fig. 13].[77] Television remains central to the lives of older generations but is becoming less prominent among younger people: in 2024, those aged 65 and over watched almost seven hours of television a day, compared with less than three hours among 13- to 24-year-olds.[78]

Daily television viewing by age group, 2024

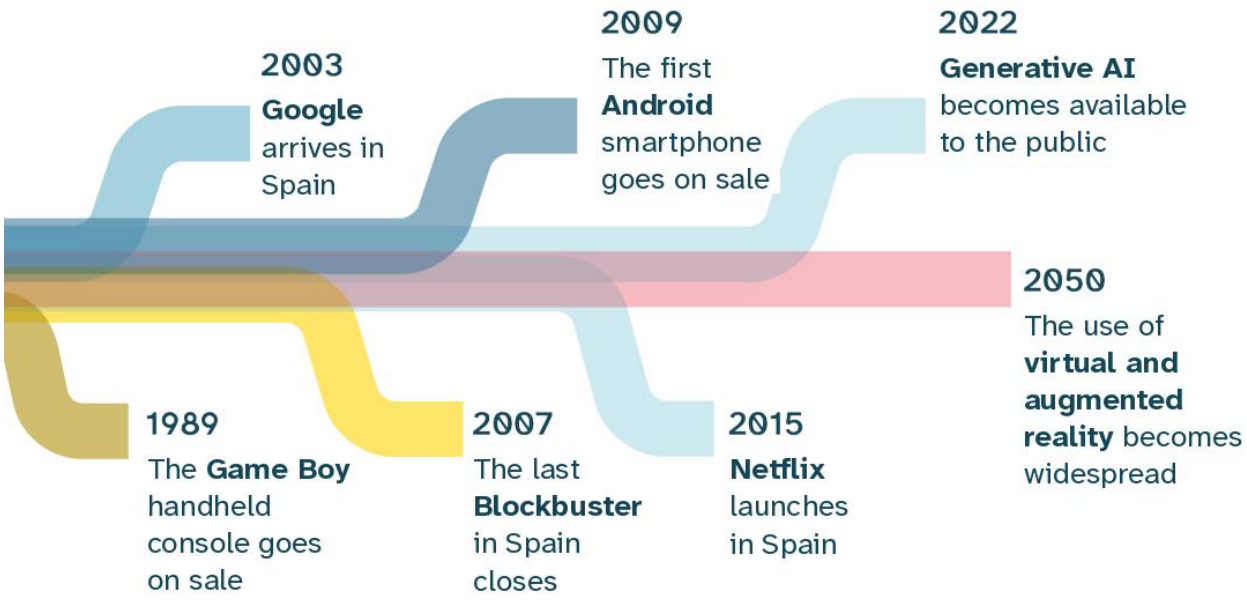


Source: Authors' own calculations based on Barlovento Comunicación and 40dB.

As algorithms become more prominent, a growing share of access to information and entertainment will be mediated by recommendation systems. Being able to distinguish reliable information from manipulated content could become an increasingly important skill in a context where content is becoming more personalised and fragmented, weakening shared frames of reference and potentially fuelling polarisation.[79] Continuing to improve the transparency of digital platforms and strengthen digital and media literacy will be key to ensuring that leisure and access to information take place in an environment of greater trust and autonomy.[80]

Some free time could increasingly be devoted to improving and monitoring personal habits and performance.[81] With the integration of artificial intelligence, tracking sleep, physical activity or attention levels could shift from a conscious choice to an automatic and continuous practice, blurring the boundaries between leisure, well-being and productivity.[82] Constant connectivity will increasingly extend into the night, reducing both the quantity and quality of sleep. In 2024, 73% of the population slept less than they would like on working days and, among adolescents aged 11 to 18, the share sleeping six hours or less on weekdays rose from less than 10% in 2010 to 25% in 2022. This trend could intensify in the coming decades, particularly among people living alone[83] [see Working to Live and Living Longer, Living Better].[83]

Fig. 13. Key milestones in the history of communication and entertainment in Spain



Source: Authors' own calculations.

Analogue experiences based on digital disconnection, sustained attention and direct interaction will increasingly be perceived as scarce and valuable, associated with new forms of status linked to slower, hands-on and face-to-face experiences. To ensure that these forms of leisure remain accessible, public spaces will need to be adapted to encourage slower-paced activities, social interaction and shared use. Otherwise, these practices could become a new source of social differentiation: the ability to engage in forms of leisure that require time, sustained attention and certain resources will depend to a large extent on each person's cultural and economic capital. As at other points in history, when certain practices become widespread, social distinction tends to shift towards those that are less accessible.[84]

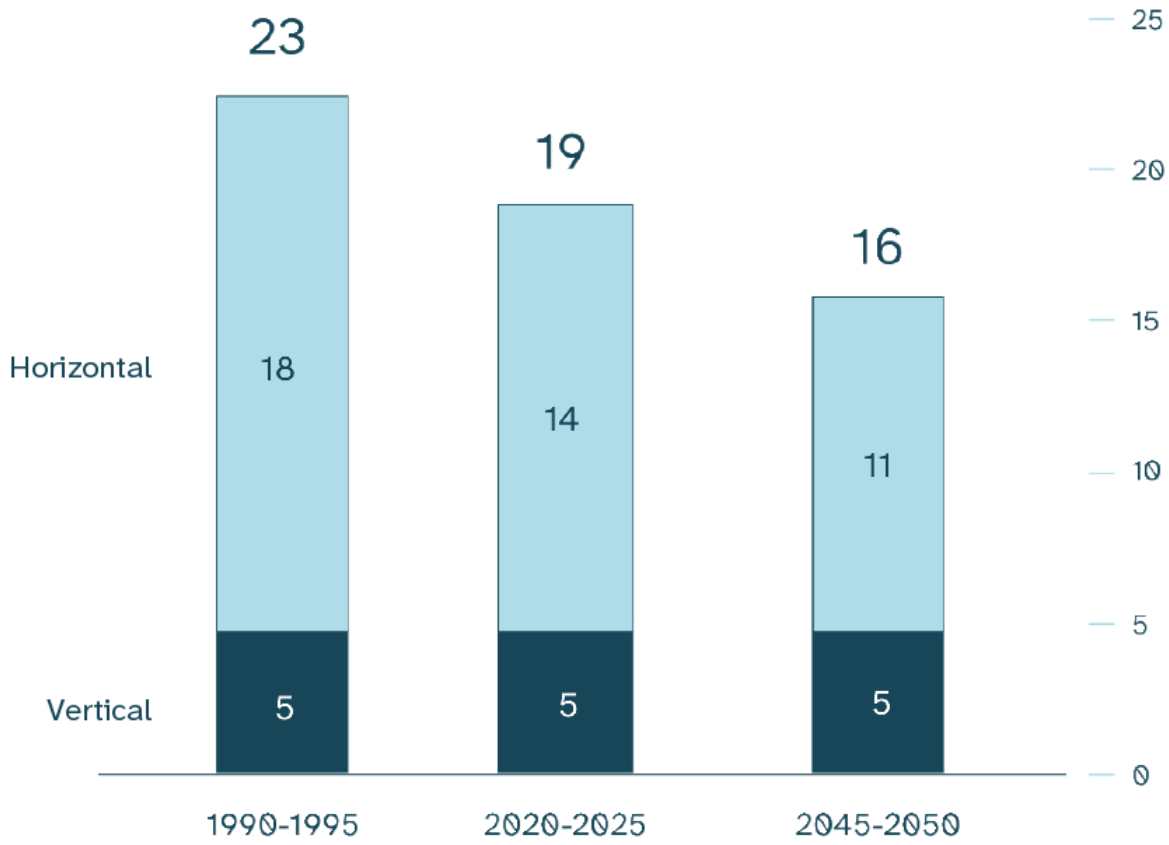
Diverse and Digital Social Ties

By 2050, people's networks of close relationships will tend to be more diverse, fragmented and mediated by digital environments, deepening the ongoing transformation in what closeness and intimacy mean. The ability to maintain stable relationships will depend on available time, resources and mobility, all of which will shape access to face-to-face spaces and opportunities for social interaction.[85] At the same time, the expansion of digital interactions will coexist with a growing sense of unwanted loneliness.[86] This paradox suggests that having more connections will not necessarily translate into closer or more fulfilling relationships.

Family ties will remain important, but other relationships will play a greater role than in the past. Friends, colleagues and pets could become increasingly important in people's emotional lives. This shift will coexist with a reduction in the size of kinship networks.[87] Someone born in 2018 could reach the age of 30 with around 16 living relatives, compared with 23 for those who reached that age in 1990–1995. This could mean smaller family gatherings, including during holidays and celebrations. "4-2-1" families (4 grandparents, 2 parents and 1 child) could become more common and, although people will share more years of their lives with grandparents and, in some cases, great-grandparents, the number of people with no siblings and few or no cousins will increase[88] [Fig. 14].[88] This trend will reinforce the importance of developing more shared models of care adapted to increasingly smaller family networks [see Shared Care].

By 2050, it will become increasingly common to maintain meaningful relationships with people met in different places and at different stages of life. Younger generations will spend longer in education, change jobs and places of residence more frequently, and follow more mobile life paths than their parents and, especially, their grandparents. As a result, networks of close relationships will increasingly stretch across different places and stages of life, combining long-lasting relationships with others that are more flexible, intermittent and changing [see Working to Live and Making the Most of Travel Time]. In this context, relationships that endure over time will continue to play a fundamental role as sources of support, stability and certainty throughout life.[89]

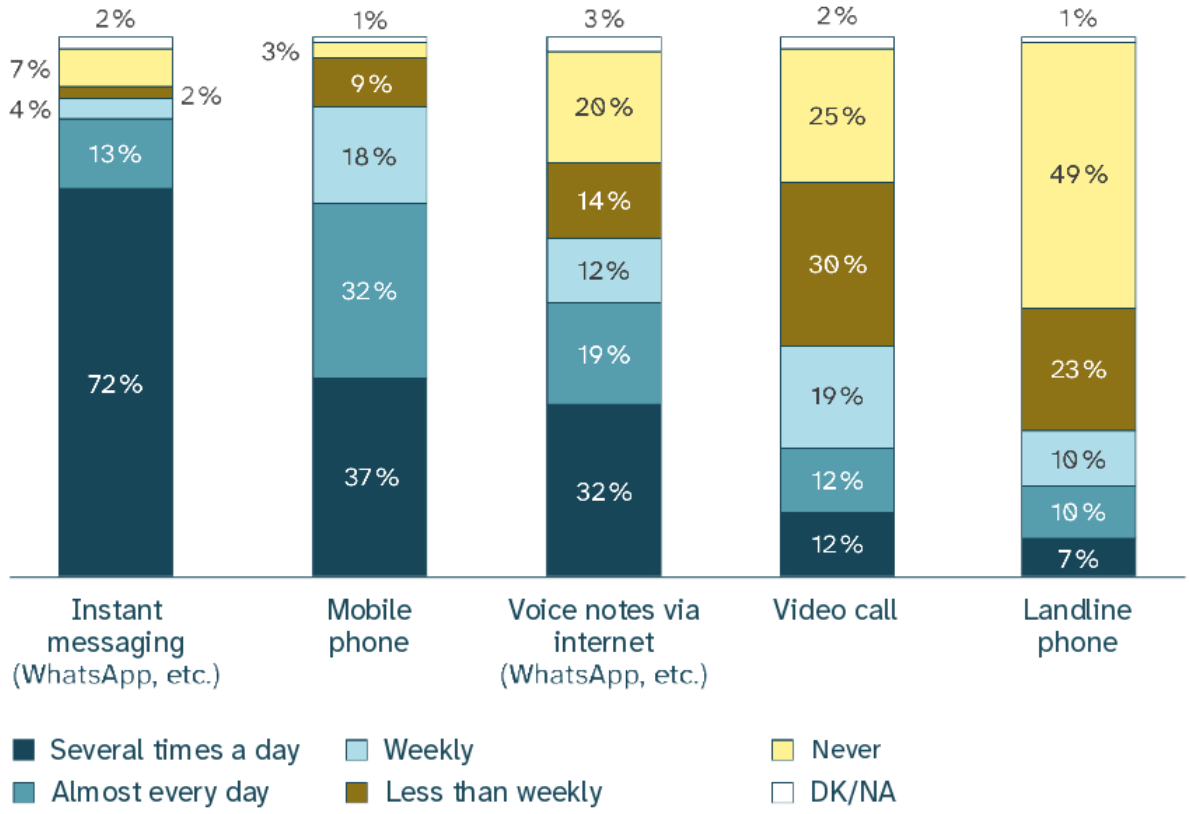
Fig. 14. Projected number of relatives of women aged 30 to 34



Source: Authors' own calculations based on Alburez-Gutierrez, Williams and Caswell.[90]

Digital spaces will play an increasingly important role in forming and maintaining meaningful relationships, and many relationships will develop without people needing to share the same physical space. Already in 2023, one in four young people made friends or found a partner online.[91] As these forms of interaction become more widespread, a growing share of the everyday interactions that sustain close relationships will take place in digital environments. Less physical presence could be offset by more frequent, immediate and varied forms of communication.[92] This will extend trends that are already visible: in 2024, 70% of people in Spain used instant messaging several times a day to communicate, while one in four made video calls frequently[93] [Fig. 15].[93]

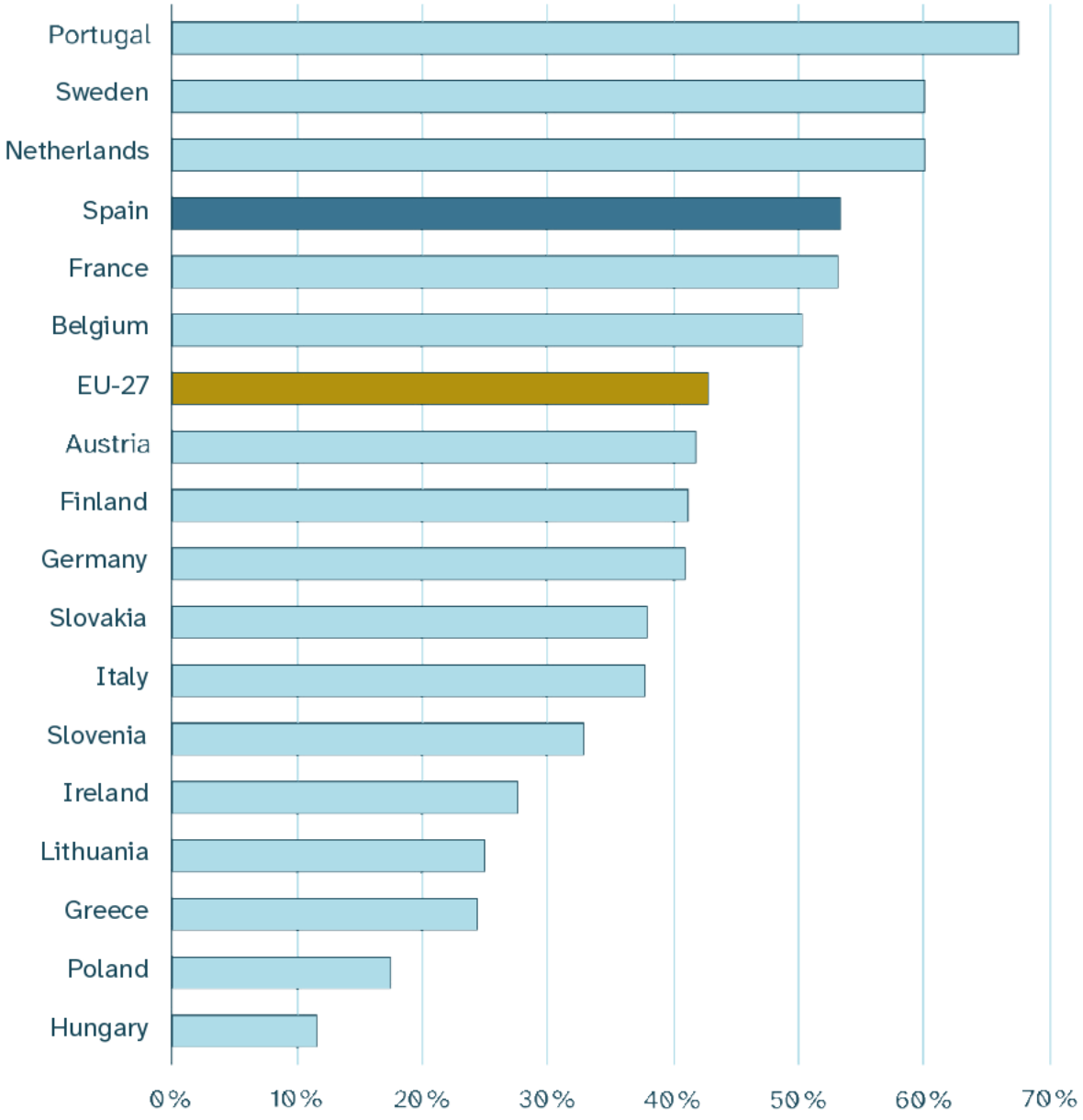
Fig. 15. Frequency of calls and messages using traditional communication services in Spain, 2024



Source: Authors' own calculations based on the Household Panel of the National Commission on Markets and Competition.[94]

To sustain these digital relationships, new devices integrated into everyday environments will enable more continuous communication that is less dependent on specific moments of connection. Augmented reality glasses, interactive surfaces in homes and workplaces, or even implantable devices could make interaction with loved ones a more natural part of everyday activities. At the same time, devices will incorporate new forms of interaction, such as gesture-based or conversational interfaces, as well as artificial intelligence systems capable of managing messages, organising interactions or mediating communication.[95]

Fig. 16. Share of people who meet with family or friends at least several times a week, 2023



Source: Authors' own calculations based on the European Social Survey.[96]

Technology will not replace the need for physical contact. By 2050, meeting frequently with friends and family could remain a common practice in Spain. Today, 53% of people in Spain do so several times a week, compared with an EU average of 42%[97] [Fig. 16].[97] At the same time, as constant connectivity can lead to overload, anxiety or a sense of overexposure, people may place greater value on face-to-face encounters and shared spaces for disconnecting [see Leisure Online and On Demand]. However, the ability to limit digital exposure or find time to nurture face-to-face relationships will not be the same for everyone. These differences will have multiple causes—such as access to third places, mobility, use of time and local ties—and could become a new source of inequality in how people build and maintain their networks of close relationships.

Making the Most of Travel Time

In the coming decades, time will play an increasingly important role in mobility choices: what will matter is not only how long a journey takes, but also whether that time can be put to good use. Journeys that allow people to rest, work, exercise or socialise while travelling will become more attractive. Alongside time, the effects of different transport options on health and well-being will also become more important, particularly among people who already take environmental considerations into account in their everyday decisions. As the impacts of climate change become more visible and more low- and zero-emission options become available, these preferences could become more firmly established among part of the population and gradually change mobility habits.[98] This transformation will depend on the ability to continue expanding sustainable mobility options and strengthening policies that reduce travel times and transport-related emissions.[99]

Stronger public transport, a growing urban population and the expansion of shared mobility will broaden the range of ways to get around, particularly in cities.[100] As different modes of transport become better integrated, it will become increasingly common to plan journeys through apps that combine routes, timetables, payments and different forms of transport within a single trip. This greater coordination will make mobility more flexible, personalised and efficient.[101] At the same time, new solutions for small-scale freight transport, such as drones or vertiports in certain contexts, could become more established.[102]

At the same time, the potential emergence of autonomous vehicles could redefine the role of the car in cities.[103] Autonomous vehicles could help reduce waiting times, optimise traffic flows at times of high demand and enable new on-demand services, ranging from shared fleets to mobility solutions for people with limited ability to travel independently. Rather than replacing the car, these changes could transform how people access and use it.

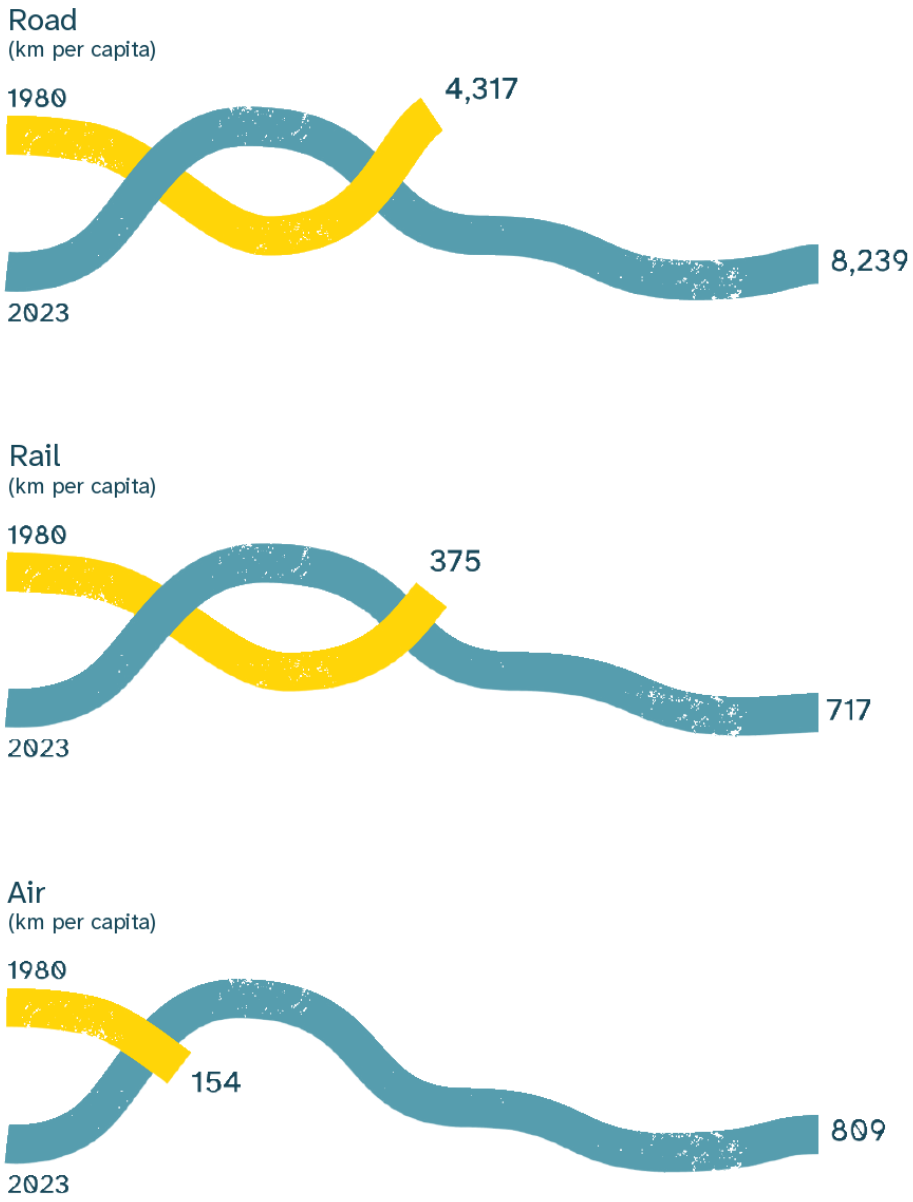
The car's role as a status symbol will not disappear entirely, but status could increasingly be associated with other features, such as the type of vehicle, its level of automation, sustainability and connectivity, while cars become less predominantly a form of private transport. The contrast will be particularly striking

compared with previous generations, for whom the car was a symbol of independence and progress for decades and became a common feature of household life.[104] In 2023, 56% of people aged 18 to 29 had a driving licence, six percentage points fewer than just eight years earlier.[105]

The ability to benefit from these transformations will depend on both the urban environment and socioeconomic factors: living in a well-connected area or having access to efficient mobility alternatives will not cost the same or be equally accessible to all households.[106] In 2021, only 56% of the population took less than 40 minutes to get to work, compared with 80% in the early 2000s.[107] In rural and low-density areas, dependence on cars will remain a source of vulnerability, as fewer public transport options and greater distances to essential services increase both the time and financial costs of travel and amplify the effects of any increase in energy prices or restrictions on private car use.[108] Reducing these differences will require continued efforts to strengthen mobility options tailored to the characteristics of each area, so that the transition towards more sustainable mobility does not widen existing inequalities.

The growth of remote working and flexible working hours will tend to reduce both the number and the concentration of daily journeys at particular times, cutting some routine travel and spreading mobility more evenly throughout the day. At the same time, expanding rail connections between medium-sized cities and major urban areas will provide more efficient alternatives to everyday car use. For long-distance travel, improvements to the rail network could increase the role of trains, although cars will remain common for journeys within Spain and air travel for international trips.[109]

Kilometres travelled per person on domestic trips, by mode of transport



Source: Authors' own calculations based on data from the Ministry of Transport and Sustainable Mobility.[110]

Changing Ways of Eating

By 2050, changes in family and working life will also affect when people eat and who they share their meals with [see More Diverse Families and Working to Live]. The trend towards spending less time eating may continue, while mealtimes could become less synchronised among family members. Lunch could gradually lose some of its central role as working patterns move closer to those elsewhere in Europe and more flexible formats become widespread, such as combining an aperitif with lunch or an afternoon snack with dinner.[111]

In the future, people will continue to eat with family members or colleagues, but eating alone will become more common. The rise in single-person households and the expansion of remote working will mean that more people eat alone at certain stages of their lives—in 2022, 23% of the population already ate lunch or dinner alone on weekdays. Since eating with others and following relatively structured mealtimes are associated with more balanced eating habits, these changes could become relevant health risk factors in the coming decades.[112]

By 2050, the time involved will become increasingly important when deciding where to shop and eat. In 2023, households already did 65% of their food shopping in supermarkets and made relatively little use of traditional retailers such as markets, fishmongers or butchers. In this context, online grocery shopping, which so far has been used more occasionally, could become more common.[113] The boundary between eating at home and eating out will become increasingly blurred, giving rise to more options in between, such as taking home-prepared food elsewhere or eating meals prepared by supermarkets or restaurants at home.[114]

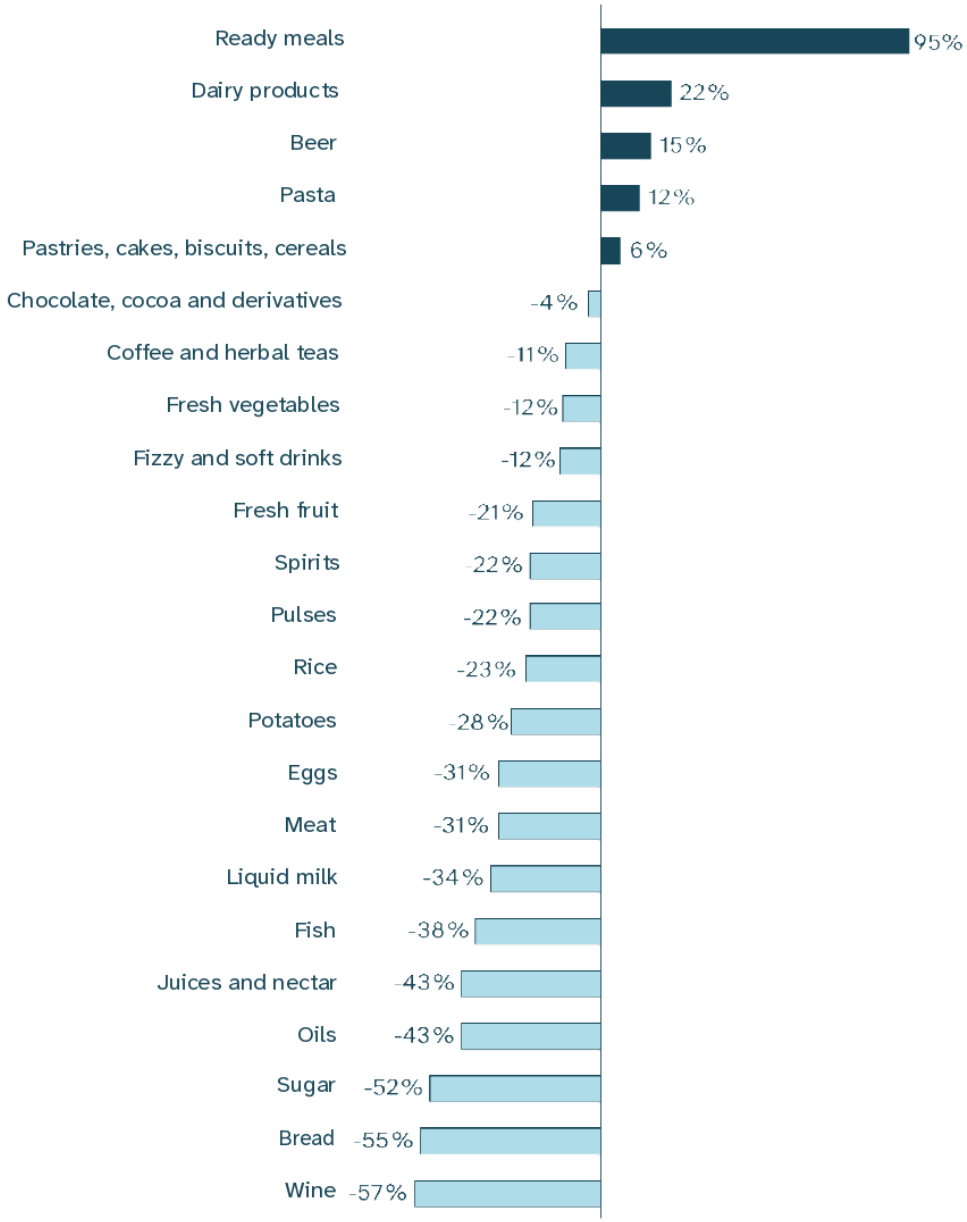
One-dish meals, quick cooking methods and ready-made meals could become more common on Spanish tables in the future.[115] In 2023, one-dish meals accounted for half of weekly lunches and 70% of dinners. Quick, yet healthy, cooking methods are becoming increasingly common. In 2024, 24% of people in Spain felt that traditional food consumption had declined, while 46.5% believed it was being displaced by fast food. In addition, **AI-powered kitchen appliances could gradually become part of**

everyday meal planning, suggesting recipes based on the food available in the pantry and each person's nutritional needs.[116] Increasingly widespread access to these tools and to culinary and nutritional information could make it easier to prepare more varied meals with greater precision, even when time is limited. This shift will nevertheless depend on the time available, working conditions and access to resources. In 2022, more than 60% of those responsible for cooking at home spent between one and seven hours a week on this task, and many preferred to eat out several times a month.[117]

In the future, cooking may therefore come to be seen less as a daily routine and become concentrated in chosen moments, such as weekends or social gatherings, while continuing to be perceived as a form of care within the family. In this context, men are likely to continue increasing their participation in household tasks, narrowing gender differences in the distribution of domestic work related to food and cooking[118] [see Working to Live].[118]

By 2050, the contents of the shopping basket will have changed. Globalisation and changes in household structures will have reshaped diets: less bread, potatoes, meat and fish, and more dairy products and ultra-processed foods[119] [Fig. 17].[119] If some of these trends continue, the shopping basket of 2050 could contain **more foods rich in plant-based protein, such as pulses and nuts, less meat and fish**, and a greater share of organic and locally produced food. The number of people reducing their consumption of meat and fish without removing them entirely from their diets is likely to increase, while the use of dietary supplements could become more common, particularly among women and certain age groups. In 2023, per capita consumption of meat and fish was well below the levels recorded in the early 1990s, and in 2020, 75% of the population reported having consumed some form of nutritional supplement during the previous year[120] [Fig. 18].[120] Foods that are still relatively uncommon today, including quinoa, buckwheat and teff, could also feature more frequently on menus.[121]

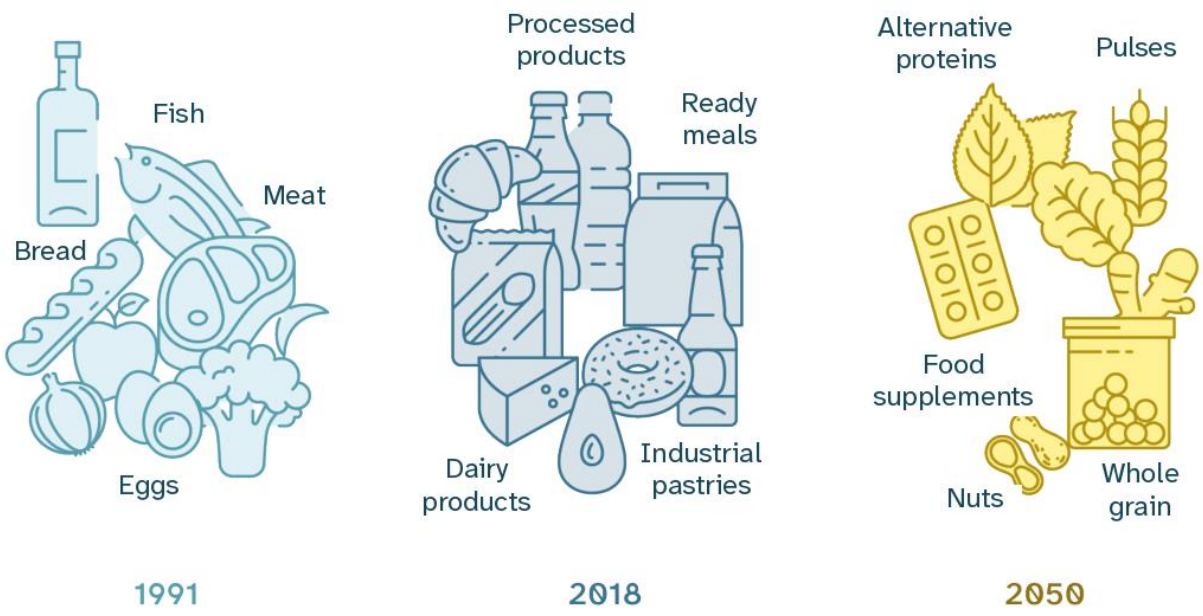
Fig. 17. Changes in eating patterns in Spain between 2023 and 1999 (per capita consumption among people aged 35 to 49)



Source: Authors' own calculations based on data from the Ministry of Agriculture, Fisheries and Food.[122]

The development of precision nutrition could make it possible to tailor diets to people's metabolism, gut microbiota and specific conditions such as food allergies or intolerances [see Living Longer, Living Better], **while technological innovation could introduce new forms of food production, such as proteins from microbial sources or cultivated meat produced through cellular agriculture.**[123] The expansion of these alternatives will, however, depend on whether they can be industrialised, made more affordable and produced at scale, as well as on the government regulations that may apply to these new foods. If these conditions are met, some cultivated or processed protein products could become more accessible options.

Fig. 18. Examples of representative shopping baskets for each generation



Source: Authors' own calculations based on data from the Ministry of Agriculture, Fisheries and Food.[124]

In the coming decades, **interest in organic food could continue to grow**. Whether these preferences translate into actual changes in consumption habits will depend partly on the ability to continue expanding the supply of healthy and sustainable products at affordable prices, through innovation, technological development and policies that make them more widely available [see Living Longer, Living Better].[125] The development of **new biodegradable and compostable materials** made from algae, almond shells or cheese whey could also **support the gradual replacement of plastics** in certain uses, reducing environmental impact and allowing these materials to be more easily integrated into waste treatment systems.[126]

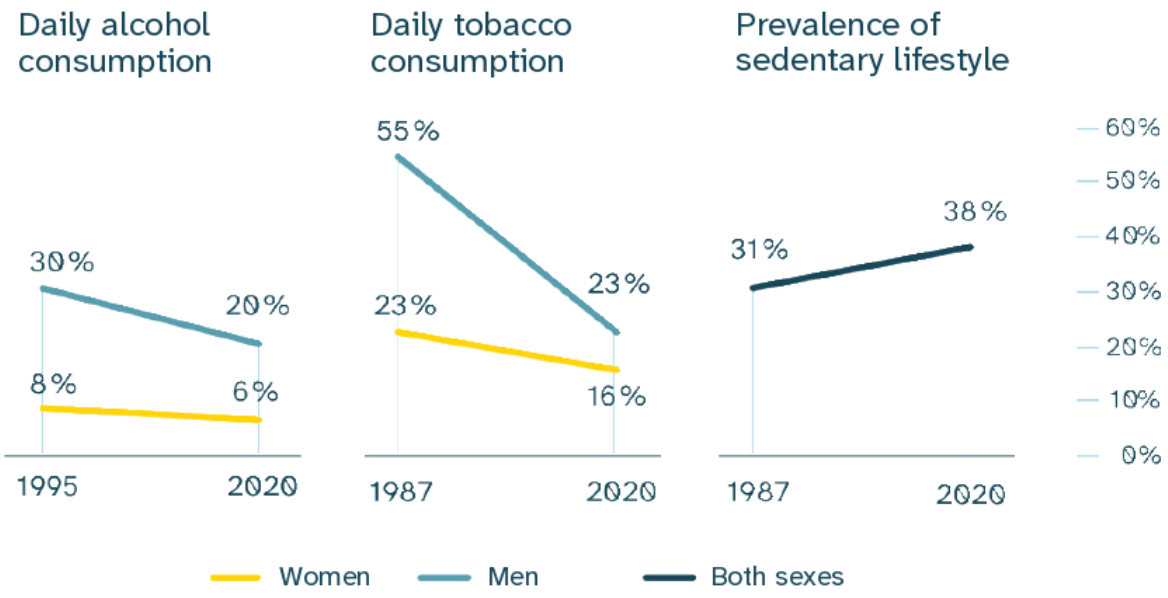
Living Longer, Living Better

By 2050, we will be living longer. In Spain, life expectancy at birth has increased by nearly five years over the past three decades and could rise by another three years over the next two decades. However, the challenge will not only be to extend life, but to improve the quality of those additional years by reducing the impact of chronic diseases. Spain, like other nearby countries, is already seeing an increase in the total number of years lived with health problems, particularly among women.[127] Having enough time to rest, access to healthy food and environments that encourage healthy lifestyles will continue to shape how many years people can expect to live in good health.[128]

At the same time, technological advances and improvements in healthcare services will enable more preventive, personalised and continuous forms of healthcare. Tools such as telemedicine, remote monitoring and advanced testing will support earlier diagnoses and more precise monitoring of chronic diseases, while technologies such as artificial intelligence, genomic sequencing, gene editing and immunotherapies could transform the diagnosis and treatment of diseases such as cancer, Alzheimer's and some hereditary conditions. In the longer term, if techniques such as tissue regeneration or cellular reprogramming progress successfully, it may become possible to address some of the damage associated with ageing and further increase the number of years lived in good health.[129]

Lifestyles are changing, and so is the landscape of health risks. Tobacco and alcohol consumption are declining in Spain, while obesity is increasing, particularly among more vulnerable groups. In the late 1980s, more than half of men and one in four women smoked daily, while 18% of the population drank alcohol regularly. In 2024, the picture looks very different among younger generations: regular tobacco use stands at around 27%, while only 10% of boys and 4% of girls report drinking alcohol daily.[130] Other risks, however, are moving in a less favourable direction. The growth of office work and screen time has made sedentary lifestyles more widespread, with around 40% of people now reporting a sedentary main activity, despite an increase in physical activity during leisure time in recent years.[131]

Fig. 19. Health habits of the Spanish population (% of total)



Source: Authors' own calculations based on data from the Ministry of Health, Montero-Torreiro and OECD.[132]

At the same time, **obesity has risen steadily since the late 1980s and now affects around 15% of the adult population, compared with just over 7% at that time**.[133] The rise in childhood obesity is particularly concerning, as it can affect health throughout life and increase the likelihood of obesity in adulthood. In 2023, 7.1% of children aged 2 to 17 were living with obesity, and projections from the Global Burden of Disease Study suggest that one in four children and adolescents could be living with obesity by 2050[134] [Fig. 19].[134] This reinforces the importance of measures already included in public health policies, such as promoting healthy eating habits from an early age, providing balanced meals in school canteens and making fresh food more affordable.[135]

Mental health will be another major challenge for young people in 2050. Problems related to psychological and emotional well-being, including unwanted loneliness, already affect different age groups, although some signs are particularly visible among young adults, whose life paths are shaped by greater uncertainty as well as changes in how people socialise [see Diverse and Digital Social Ties]. In 2022, more than half of 18- to 24-year-olds reported having experienced prolonged depression or anxiety at some point in their lives, while 10.5% of people aged 16 and over reported experiencing unwanted loneliness. Even so, unwanted loneliness remains less common in Spain than the EU average and far below the levels recorded in countries such as Ireland and Greece, where it affects almost twice as many people. This difference could be related to the persistence of family ties, local support networks and everyday forms of social interaction that continue to act as protective factors.[136]

On the other hand, **close to half of the population could suffer from some type of allergy by 2050**, if Spain were to follow a trajectory similar to the one projected globally by specialised scientific bodies.[137] Air pollution, changes in pollination cycles and greater exposure to indoor household allergens could contribute to this projected increase in allergies. In 2017, 16% of the Spanish population had been diagnosed with some kind of allergy, compared with less than 6% in the early 1990s. Likewise, climate change and environmental degradation could also favour the spread of vector-borne diseases such as dengue, Zika, West Nile fever or chikungunya, which are still uncommon in Spain and mainly associated with imported cases.

In more exceptional situations, eradicated diseases such as malaria could run the risk of occasional re-emergence if environmental conditions favourable to their transmission were to arise.[138]

If there are no medical innovations that change international trends, bacterial resistance will be one of the main health challenges. Some projections for 2050 put deaths associated with bacterial resistance at around half of those caused by cancer.[139] Excessive and, in many cases, inappropriate consumption of antibiotics has accelerated the emergence of resistant bacteria, weakening one of the most decisive advances of modern medicine. Although their use has declined in recent years, in 2021 Spain still showed consumption levels above the OECD average, and antibiotic resistance was already associated with some 32,000 deaths a year. Since these resistances are linked to factors that cut across human health, animal health, food production and the environment, their prevention and control benefit from coordinated strategies, in line with the integrated One Health approach set out in the National Plan against Antibiotic Resistance (PRAN) 2025–2027.[140]

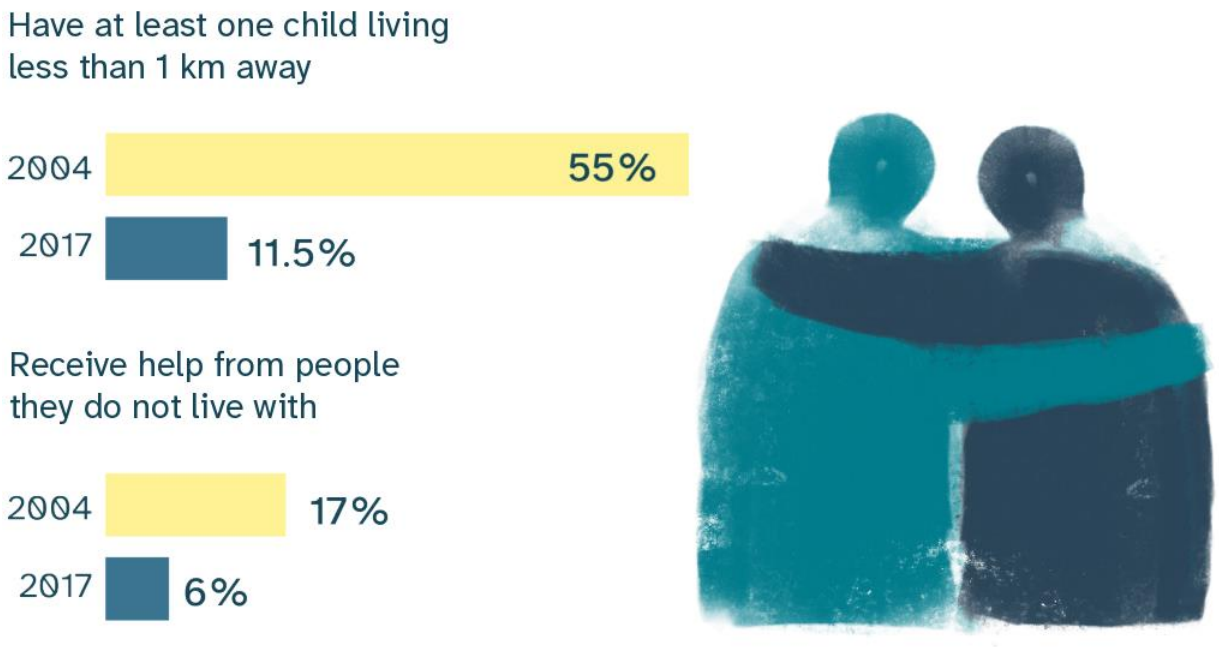
Shared Care

By 2050, at least one in four people will live alone and around 2.7 million people over 65 could need support to carry out activities of daily living.[141] These needs will not be evenly distributed; they will be shaped by life trajectories, socioeconomic position, place of residence and family structure.[142]

Traditionally in Spain, the care of dependent people has fallen on families and, within them, mostly on women, through unpaid informal care. However, **in the future care will gradually stop being seen as a strictly family responsibility and will become progressively professionalised, forming a system in which families, public services and qualified staff all take part.** This trend towards greater professionalisation is associated with families' reduced capacity to meet, on their own, the care needs linked to ageing, partly due to growing residential distance between generations [Fig. 20], the decline in average household size and higher female labour-force participation. The rise in separations and blended families could also make it harder to sustain some intergenerational support ties. The response to these transformations could require a broader combination of family support, professional services and public resources, together with greater co-responsibility between women and men, a trend that has already begun to be seen in recent years.[143]

In some contexts, neighbourhood networks and local companionship initiatives could gain relevance as a complement to formal services, especially in situations of unwanted loneliness, while housing formulas such as senior cohousing or intergenerational cohabitation could offer complementary solutions for some older people. This orientation is aligned with recent strategies such as the State Strategy for a New Model of Community Care 2024–2030 and the State Strategic Framework on Loneliness 2026–2030, which aim to strengthen care in people's usual environment and to prevent loneliness from a more integrated perspective. Pets could also take on a larger role, owing to their contribution to the emotional well-being and mental health of some people experiencing unwanted loneliness.[144]

Fig. 20. Support networks for people over 65 in Spain (% of total).



Source: Authors' own calculations based on SHARE.[145]

Furthermore, **in the coming decades most of the Spanish population will continue to prefer to age at home, which will make home care and telecare more necessary.** Digitalisation and automation can help sustain this model by facilitating monitoring, or the use of home automation or artificial-intelligence-based systems to support the work of caregivers. However, these tools will not be able to replace the human dimension of care. Their intensive use carries the risk of moving towards more standardised forms of care with less capacity for personal accompaniment.[146]

The sustainability of this model will depend, to a large extent, on the availability of qualified professionals. Continued improvement in working conditions, job stability and training will be key to strengthening the care sector's capacity to attract and retain workers. An estimate based on IMSERSO data suggests that more than 400,000 additional professionals would need to be recruited to preserve current levels of care in 2050. The future viability of the system will therefore increasingly depend on the capacity to attract, integrate and retain talent, especially in a sector where the migrant population already plays a fundamental role.[147]

Action Strategies for Future Lives

The following strategic fronts reinforce or complement those already set out in Spain 2050.

Front 1. Promote new forms of protection for people in the digital environment

The growing digitalisation of daily life has broadened access to information, services and spaces for interaction, but it has also increased people's exposure to automated systems that operate with little visibility. The widespread use of algorithms in content personalisation, decision-making or data management introduces new asymmetries of information and control that are difficult to manage from individual experience. Although digital rights and platform transparency obligations have been significantly strengthened in recent years, the growing complexity of these systems will make it necessary to keep moving towards environments that allow people to understand and decide on the use of their data and their digital identity.

Profiling, understood as the use of data to evaluate or anticipate a person's characteristics, has become a routine component of personalisation and algorithmic decisions. The generalisation of these systems, together with the information asymmetries between platforms and users, limits in practice the ability to understand and manage the use of personal data. Building on the regulatory advances of recent years, **it will be necessary to keep strengthening the transparency, control and reviewability of these processes**, fostering better-informed decisions about one's own digital identity and consolidating platforms' responsibility for traceability and explainability.[148]

When a person dies, their accounts, content and personal data remain in digital environments managed by private platforms, whose administration by relatives or loved ones usually involves complex and not very accessible processes. This set of elements, which includes both assets with financial value and content of a personal or sentimental nature, raises differentiated management needs that are not always clearly resolved. In this context, **it will be necessary to keep consolidating instruments that allow people to set out, during their lifetime, instructions on the fate of their digital identity**, including access to,

preservation or deletion of content, facilitating their practical application, reducing uncertainty for families and strengthening individual control over one's own digital footprint beyond their lifetime.[149]

Front 2. Strengthen support for child-rearing

Child-rearing support helps families have children if they so wish. How this support is structured can be decisive in making the decision to have children part of a viable and sustainable life project. Within this framework, **moving towards broader, more flexible and more co-responsible birth and childcare leave** could strengthen care in the first months of life.[150] The experience of countries such as Norway, Sweden and Iceland shows that longer and more adaptable schemes facilitate a more balanced distribution of care and better adaptation to family needs, including those of single-parent households and other situations equivalent to single parenthood.[151] This framework can be complemented with instruments that respond to everyday situations, such as **caring for children during short-term illnesses**, already in place in countries such as Portugal.[152]

For its part, **continuing to strengthen child-rearing support** can help reduce inequalities and make it easier for families to meet the costs associated with having children.[153] The experience of countries such as Germany and Sweden shows that different combinations of financial support and services make it possible to accompany families' needs more effectively throughout child-rearing.[154] This approach also includes strengthening existing protection mechanisms, such as those aimed at **guaranteeing effective payment of child maintenance** in contexts of separation or financial difficulty.[155] Likewise, some countries have developed specific support for the earliest stages of life, facilitating access to **basic products for newborns**, as in Finland or Scotland.[156]

Finally, **moving towards more equitable and uniform access to assisted reproduction services** would make it possible to accompany the postponement of motherhood and respond to the diversity of reproductive trajectories, helping more people have the children they want.[157] In neighbouring countries such as Belgium and the Netherlands, public coverage of these techniques is broader, thus helping reduce access barriers and expand reproductive options.[158]

Front 3. Foster equal access to opportunities in the early stages of education

Access to quality education in the early stages of life is one of the factors with the greatest influence on people's life trajectories, and also one of those that most faithfully reproduces inequalities of origin. Each person's starting point continues to condition their development opportunities to a large extent, which places educational equity among the horizons with the greatest potential for building a fairer society.

In the field of education, for example, **progressively expanding free access to nursery schools for children aged 1 to 3** would help foster cognitive development in the first stages of life and facilitate work-family balance.[159] Along similar lines, **extending free school meals in basic education**, with attention to nutritional quality, would help reduce inequalities of origin. The well-established experiences of Finland and Sweden, where school canteens have been universal and free for decades, with positive long-term effects on students' health and mothers' labour-force participation, could serve as an example.[160]

Complementarily, **encouraging a wider range of free extracurricular activities**, prioritising the most vulnerable settings, would favour more equal access to a well-rounded education. The UK's Extended

Schools programme could serve as a reference.[161] In addition, **strengthening psychological and social support teams in schools** would be key to addressing emotional and learning difficulties and preventing bullying. The KiVa programme, already implemented in some schools in Spain and in countries such as Finland, the Netherlands and New Zealand, could be used as a guide.[162]

Front 4. Adapt working environments to new contexts

Work occupies a central place in people's lives and has a direct influence on their well-being, their health and their capacity to develop other areas of their lives. As expectations about job quality evolve and new technologies transform working environments, other, more flexible and satisfying work models are emerging that allow people to better reconcile their professional and personal lives.

A first line of action could revolve around **promoting flexible working hours, and in particular the continuous working day**, as a formula that, insofar as the nature of the activity allows, could have a positive effect on work-life balance and on women's participation in the labour market. In those jobs where it is feasible, this greater flexibility could be complemented with models requiring less on-site presence, broadening people's capacity to organise their time. Countries such as Norway and the United Kingdom, where this model is the majority, offer well-established references in this regard.[163]

Improving the conditions of voluntary leave of absence—incorporating, for example, retention of the job and the counting of seniority during the first year in companies above a certain size—could broaden the effective use of this arrangement, with positive effects on professional development, updating of skills and workers' mental health. Australia and France already have regulatory frameworks along these lines.[164]

Finally, in certain work contexts **other models that broaden workers' participation in business activity could be explored**, with a view to improving the organisation's governance and integrating technological change.[165]

Front 5. Adapt the legal framework to the growing diversity of emotional ties and family forms

The emotional and care ties that people build throughout their lives take increasingly diverse forms, which are not always reflected in the current legal framework. This gap between social reality and the legal order suggests the option of exploring more inclusive legal frameworks that give protection to the diversity of ties that sustain people's daily lives.

Exploring legal frameworks that recognise so-called friendship unions—bonds of mutual care beyond the traditional family or the couple—is a direction of interest for adapting to the diversity of forms of support that characterise today's society. Recognising these ties could open access to certain care-related rights, helping to reduce the lack of protection of those who do not fit the relational models contemplated by current legislation. Catalonia and Navarre have already taken some steps in this direction.[166] Along similar lines, **the rights of unmarried registered couples could be expanded**, in the tax and inheritance spheres, for example through the possibility of filing a joint personal income tax (IRPF) return, or through some form of succession recognition.[167]

Beyond the legal recognition of the different types of bond, the way the legal order regulates the transfer of wealth between generations is another relevant dimension for adapting the legal framework to the diversity of current family and relational structures. **Moving towards greater flexibility in the distribution**

of inheritances—broadening people's discretion over how to bequeath their estate in the portion known as the *legítima* (forced heirship)—could contribute to better protection of the spouse, facilitate transfers between non-consecutive generations and recognise emotional and care ties that today fall outside inheritance law.[168]

Access to motherhood and fatherhood is another dimension in which significant inequalities persist depending on the type of family. **Expanding the range of assisted reproduction techniques covered by the public health system** would help reduce these barriers and advance towards greater effective equality in this area. Other European countries offer references of interest on how to move in this direction.[169] In a complementary vein, **exploring new frameworks of legal recognition for those who participate stably in raising children and adolescents without a biological link** is a direction of interest for providing legal certainty to care ties that already exist in practice—in extended families, friendship networks or communities—but which today lack legal recognition. Such arrangements would not alter parental authority (*patria potestad*), but would complement the existing framework to cover increasingly diverse family realities.[170]

Front 6. Promote intergenerational living and tackle unwanted loneliness

Population ageing and the growing atomisation of households have reduced opportunities for contact between generations, with documented effects on well-being and social cohesion. Loneliness, especially among older people, and the distance between different age groups are mutually reinforcing dynamics that current residential and urban environments do not always help reverse. In this context, it makes sense to explore formulas that foster intergenerational living and broaden spaces for encounter and mutual support among people at different stages of life.

One line of action would aim to **encourage the development of collaborative housing or cohousing models**, giving them an appropriate recognition framework as a way to broaden the residential options available and foster new forms of living together.[171] In a similar vein, **promoting formulas that encourage intergenerational living environments** could be considered, given the proven benefit such environments have for all generations.[172]

An additional line could be the **exploration of "social prescribing"**, aimed at connecting people with community resources, activities and networks that favour social participation, companionship and intergenerational ties. Loneliness, sedentary lifestyles or isolation have documented effects on health and well-being that can hardly be addressed from an exclusively clinical logic, which reinforces the value of exploring mechanisms that connect public services with the existing social fabric.[173]

Front 7. Strengthen access to decent housing

Demographic transformations and changes in forms of cohabitation open up the opportunity to move towards more flexible, affordable and sustainable residential models, adapted to the needs of a changing society. Seizing this opportunity will require housing policies with a long-term perspective.

In this direction, one of the orientations with the greatest potential is the one pointing towards **consolidating and expanding the public stock of permanently affordable and protected housing**, as a way to reduce the financial effort families devote to housing. Strengthening aid aimed at young people and groups with the greatest access difficulties would help ensure that progress in this area reaches those who need it most.[174]

Beyond access, the quality and sustainability of the existing stock is another relevant dimension of the housing challenge. **Progressive rehabilitation of the housing stock**, gradually extending its reach to territories and building types still poorly covered, could improve living conditions and reduce the sector's environmental impact.[175] Finally, **expanding the residential use of inherited homes at affordable prices** could improve supply without the need for new construction, making use of a stock that often remains underused. Countries such as Norway and Australia have analysed in depth the effects of this phenomenon on the housing market, offering useful references in this direction.[176]

Front 8. Improve the quality of the urban environment and foster community well-being

To face the challenges of climate change and growing urbanisation, cities offer a privileged space for promoting health and community well-being in an environmentally friendly way. In this direction, the following lines are suggested.

Moving towards urban environments with a greater presence of accessible green spaces, following criteria such as those inspired by the "3-30-300" rule, is an orientation with the potential to improve the quality of the residential environment and the health of the population. Countries such as Australia, Denmark and France, as well as cities such as Barcelona, offer reference experiences in this direction.[177] In a complementary line, **incorporating minimum shading criteria in new urban developments**, through already existing regulatory frameworks, could help mitigate the urban heat island effect and improve thermal comfort in spaces for public use.[178]

Progress towards more inclusive street models geared to active mobility—accessible to people of all ages and conditions and integrated with natural features and basic services—represents another relevant orientation for improving urban liveability. In this sense, **developing accessible environmental information systems** that provide data on temperatures, pollution or air quality could improve the capacity to respond to adverse climate episodes, with special attention to the most vulnerable groups.[179] Finally, **improving the transport offer in dispersed rural areas** is an orientation that already has experience in some autonomous communities and could be extended to other territories with similar needs.[180]

Front 9. Encourage the development of healthy and environmentally friendly lifestyles

The design of cities has a decisive influence on the habits, health and relationships of those who live in them. They are also where the effects of climate change are most visible and where decisions on mobility, public spaces or housing have the most direct impact on everyday well-being. Rethinking the city as an active space for promoting health and community cohesion is one of the most relevant horizons of the coming decades.

Active mobility in commuting to work is an area with potential both for public health and for reducing emissions. The experience of countries such as Belgium and France, where frameworks exist that facilitate this type of travel, offers references of interest on the positive effects this approach can generate.[181]

In the field of food, **the recognition of healthy and sustainable catering** has shown the capacity to steer both supply and consumer decisions. Experiences such as those of South Korea and Singapore suggest that labelling schemes based on nutritional quality and product origin criteria can have relatively rapid

effects on eating habits.[182] Along the same lines, **expanding the information available on the risks associated with alcohol consumption** is another horizon to consider from a public health perspective. The accumulated evidence on its relationship with cardiovascular and liver diseases or different types of cancer reinforces the interest in exploring ways of making these risks more visible to the public. Ireland offers a pioneering reference in this direction in the European context.[183]

In a context of growing digital hyperconnectivity, it becomes especially relevant to **open new spaces for in-person socialising for children and adolescents outside school hours**. In this sense, the use of educational and cultural facilities beyond teaching hours would make it possible to create accessible, safe and healthy environments that foster encounter, strengthen bonds and develop relational skills not mediated by digital technologies. The evidence shows that these spaces contribute to the development of social bonds at a stage that is particularly relevant for mental health.[184]

Front 10. Move towards a culture of health prevention

People living more years in better health, and health systems being able to sustain that promise in the long term, are two objectives that point in the same direction: **moving from care centred on responding to acute events towards models that prioritise the prevention and monitoring of chronic diseases.**

Within this framework, **promoting environments that facilitate healthy eating throughout the entire life cycle**, from primary care to community and educational spaces, is key to reducing the burden of chronic diseases before they appear. Experiences such as those of the United Kingdom and Japan illustrate how integrating nutritional health into the health system can translate into healthier populations and a more efficient use of public resources.[185]

Regarding antibiotics, preserving their effectiveness largely depends on **continuing to promote a shared culture of responsibility among citizens, professionals and health systems** that prevents their inappropriate use. A culture in which access to medicines is aligned with the collective benefit and not only with immediate demand, and where dispensing reflects real needs. Countries such as the Netherlands and the Czech Republic offer evidence that this change is achievable and produces positive results.[186]

Finally, **improving health care through earlier diagnoses, greater coordination between services and information management that facilitates continuity of care** finds a promising path forward in technologies such as artificial intelligence or CRISPR. The experiences of countries such as Estonia and Finland offer references of interest on how to travel that path while preserving safeguards over citizens' data.[187]

Contributions

Collaborators

Luis Ayuso Sánchez — Professor of Sociology, University of Málaga.

Montaña Cámara Hurtado — Professor of Nutrition and Food Science, Complutense University of Madrid.

Albert Cañigueral Bagó — Head of coordination and development of language technologies and artificial intelligence, Barcelona Supercomputing Center.

Teresa Castro Martín — Research Professor, Institute of Economics, Geography and Demography (CSIC).

Héctor Cebolla Boado — Tenured Scientist, Institute of Economics, Geography and Demography (CSIC).

Cecilia Díaz Méndez — Professor of Sociology, University of Oviedo.

Marta Domínguez Folgueras — Permanent Professor, Centre de Recherche sur les Inégalités Sociales (CRIS), Sciences Po Paris.

Anna Escobedo Caparós — Associate Professor of Sociology, University of Barcelona.

Albert Esteve Palós — Director of the Centre for Demographic Studies and Director of Research, Autonomous University of Barcelona.

Manuel Franco Tejero — Ikerbasque Professor, Basque Centre for Climate Change (BC3).

Vania de la Fuente — Independent expert on healthy ageing and ageism.

Juan Manuel García González — Professor of Sociology, Pablo de Olavide University, Seville.

Bruno González-Zorn — Professor, Director of the Antimicrobial Resistance Unit, Complutense University of Madrid, and adviser to the World Health Organization.

Ana Hernández Revuelta — Head of Studies, Julio Verne Secondary School, and PhD in Fine Arts, Complutense University of Madrid.

Ana Llena Nozal — Senior Economist, OECD.

Antonio López Gay — Associate Professor of Geography, Autonomous University of Barcelona, and researcher at the Centre for Demographic Studies.

Vicente Marbán Gallego — Senior Lecturer, University of Alcalá.

Teresa Martín García — Tenured Scientist, Institute of Economics, Geography and Demography (CSIC).

Gerardo Meil Landwerlin — Professor of Sociology, Autonomous University of Madrid.

Carmen Pagés Serra — Associate Professor of Economics, Open University of Catalonia.

Julio A. del Pino Artacho — Senior Lecturer in Sociology, UNED.

Paula Pita — Social analyst at Demos Lab and PhD candidate in Political Philosophy, Complutense University of Madrid.

Roberta Rutigliano — Ikerbasque Researcher, OPIK Research Group on Social Determinants of Health and Demographic Change, University of the Basque Country.

Julio A. Soria Lara — Professor of Urban Planning and Territorial Planning, Technical University of Madrid.

Paloma Taltavull de la Paz — Professor of Applied Economics, University of Alicante.

Technical direction

Sara Baliña Vieites — Economist, Director of the National Office of Foresight and Strategy in 2024–25.

Luis Díez Catalán — Economist, Deputy Director of the National Office of Foresight and Strategy in 2024–25.

Marina Díez Rituerto — Deputy Director of the National Office of Foresight and Strategy.

Josep Lobera Serrano — Director of the National Office of Foresight and Strategy.

Technical team

The preparation of this report benefited from the contribution of the following technical team during their time at the National Office of Foresight and Strategy: José Ariza de la Cruz, Cristina Blanco Iglesias, Mar Cañizares Espadafor, Eulalia Gómez Martín, María Hernández Aguilar, Andoni Montes Nebreda, Antonio F. Rodríguez Matas, Alicia Sevillano Navas and Manuel Sola Rodríguez.

References

1 In Canada, Policy Horizons has published several social foresight studies analysing the evolution of life trajectories and expectations. In the United Kingdom, the Foresight Policy Lab has published a set of short stories about life in 2040 of fictional people to explain the consequences of population ageing. For more information, see: Government Office for Science. "Futures, Foresight and Horizon Scanning. Materials to help you plan for population ageing." UK Government, https://foresightprojects.blog.gov.uk/2017/06/21/materials-to-help-you-plan-for-population-ageing/; Policy Horizons Canada. *Future Lives: Exploring Life Course Transformations*. Ottawa: Government of Canada, 2022. https://horizons.service.canada.ca/resources/wp-content/uploads/2022/06/Policy-Horizons-Canada_Future-Lives_EN.pdf; and Policy Horizons Canada. *Future Lives: Uncertainty*. Ottawa: Government of Canada, 2024. https://horizons.service.canada.ca/en/2024/future-lives-uncertainty/pdf/Future_Lives_Uncertainty_EN.pdf.

2 The baby boom generation comprises people born between 1945 and 1965; generation X, those born between 1966 and 1979; the millennial generation, those born between 1980 and 1995; generation Z, those born between 1996 and 2012; and generation alpha, those born between 2012 and 2024. For more details, see: IPSOS. *Reporte de generaciones de IPSOS 2024. Conocimiento y pertenencia en todo el mundo*. Madrid: IPSOS, 2024. https://www.ipsos.com/sites/default/files/ct/news/documents/2024-05/REPORTE%20DE%20GENERACIONES%20DE%20IPSOS%202024.pdf; and McCrindle, Mark, and Ashley Fell. *Generation alpha. Understanding our children and helping them thrive*. Sydney: Hachette Australia, 2021. https://generationalpha.com/wp-content/uploads/2020/02/Understanding-Generation-Alpha-McCrindle.pdf. On the mean age at first motherhood, see: INE. *Proyección de la población de España 2024-2074. Edad media a la maternidad por año*. https://www.ine.es/jaxiT3/Datos.htm?t=36656; and *Edad media a la maternidad por orden del nacimiento según nacionalidad (española/extranjera) de la madre*. https://www.ine.es/jaxiT3/Tabla.htm?t=1579&L=0.

3 Between 1994 and 2012, Spain was the Western country where attitudes towards cohabitation, gender and marriage changed the most. Acceptance of couples living together without marriage rose from 59% to 83%, above Sweden, Norway, Germany or Austria. In the same period, rejection of the idea that women should devote themselves exclusively to the home rose from 52% to 79%, surpassing Canada, Germany or the Netherlands. Finally, the proportion of those who did not believe that marriage guarantees greater happiness rose from 43% to 65%, also above reference European countries. For more information, see: International Social Survey Programme. *1994 – Family and Changing Gender Roles II*; and *2012 – Family and Changing Gender Roles IV*. https://issp.org/data-download/by-year/.

4 Detailed information on each of these indicators is available in the corresponding chapters.

5 Mean age at first motherhood refers to 1987 and 2023. For more detail, see: INE. *Edad media a la maternidad por orden del nacimiento según nacionalidad (española/extranjera) de la madre*. https://www.ine.es/jaxiT3/Tabla.htm?t=1579&L=0.

The number of children per woman of childbearing age, i.e. the fertility rate, refers to 1987 and 2023. See: INE. *Indicador coyuntural de fecundidad según orden del nacimiento y nacionalidad (española/extranjera) de la madre*. https://www.ine.es/jaxiT3/Tabla.htm?t=1407&L=0.

The percentage of married people aged 30 to 34 refers to 1981 and 2021. See: INE. *Censo de población y viviendas de 1981. Población por Sexo, Clase de vivienda, Estado civil y Grupos de edad*. https://www.ine.es/jaxi/Tabla.htm?path=/t20/e243/e01/a1981/l0/&file=01009.px&L=0; and *Censo de población y viviendas de 2021. Estado civil*. https://www.ine.es/Censo2021/Inicio.do.

The percentage of births through assisted reproduction refers to 1999 and 2022. For 1999, in the absence of a statistical register, this percentage corresponds to the share of women aged 45 to 49 who stated in a survey that they had undergone treatment to achieve pregnancy. For 2022, it has been calculated as the number of births through assisted reproduction over the total number of births during the last quarter of the year studied and the first three quarters of the following year. See: INE. *Encuesta de Fecundidad 1999. Mujeres entre 15 y 49 años edad actual (años) tratamiento para conseguir embarazo*. https://www.ine.es/jaxi/Tabla.htm?tpx=21398&L=0; *Nacimientos por mes, edad de la madre y sexo del nacido*. https://www.ine.es/jaxiT3/Tabla.htm?t=31932&L=0; and Ministerio de Sanidad. *Informe Estadístico de Técnicas de Reproducción Humana Asistida 2022*. Madrid: Ministerio de Sanidad and Sociedad Española de Fertilidad, 2023. https://www.registrosef.com/public/docs/sef2022_IAFIV.pdf.

The percentage of divorces of heterosexual couples with minor children, where custody is to be determined, resolved with joint custody refers to 2013 (first year available) and 2023. See: INE. *Divorcios entre cónyuges de diferente sexo según tipo de divorcio y cónyuge que debe ejercer la custodia*. https://www.ine.es/jaxiT3/Tabla.htm?t=20692.

The average number of people per household refers to 1991 and 2021. See: INE. *Censo de población y viviendas 1991 y 2021*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=ultiDatos&idp=1254735572981.

The percentage of 2-year-olds enrolled in school refers to the 1988/1989 and 2023/2024 school years. See: Ministerio de Educación, Formación Profesional y Deportes. *Escolarización y entorno educativo. Tasas netas de escolarización de 0 a 5 años por comunidad autónoma/provincia y edad*. https://estadisticas.educacion.gob.es/EducaJaxiPx/Tabla.htm?path=/no-universitaria/alumnado/matriculado/2023-2024-da/comunidad/reg_general/l0/&file=general_1_03.px&L=0; and *Publicaciones de la Estadística de la Educación en España Curso 1988-1989. Tasas de escolaridad, por edad y enseñanza*. https://www.educacionfpydeportes.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/cursos-anteriores.html.

The percentage of non-university students born abroad refers to the 1991/1992 and 2023/2024 school years. See: Ministerio de Educación, Formación Profesional y Deportes. *Enseñanzas no universitarias. Alumnado matriculado. Alumnado extranjero. Alumnado matriculado por enseñanza. Enseñanzas de Régimen General*; and *Porcentaje del alumnado extranjero en el alumnado matriculado en Enseñanzas de Régimen General por comunidad autónoma y periodo*. https://www.educacionfpydeportes.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/series.html.

The mean age of the employed population refers to 2002 and 2024. See: INE. *Encuesta de población activa. Ocupados y Asalariados por sexo y grupo de edad*. https://www.ine.es/dyngs/base/es/operacion.htm?c=Estadistica_C&cid=1254736176918&menu=ultiDatos&idp=1254735976595.

Hours of unpaid household work carried out by women refer to 1993 and 2022. See: Farré, Lidia, and Libertad González. "Desigualdades de género en el trabajo remunerado y el no remunerado tras la pandemia." Observatorio Social de la Fundación la Caixa, https://elobservatoriosocial.fundacionlacaixa.org/es/-/desigualdad-de-genero-en-trabajo-remunerado-y-no-remunerado-tras-la-pandemia; and Instituto de la Mujer. *Usos del Tiempo, Estereotipos, Valores y Actitudes*. Madrid: Ministerio de Trabajo y Asuntos Sociales, 2007. https://www.inmujeres.gob.es/areasTematicas/estudios/serieEstudios/docs/usosdelTiempo.pdf#page=14.12.

The percentage of young people who watch television daily refers to 1986 and 2024. See: Centro de Investigaciones Sociológicas. *Barómetro de Octubre 1986*. Study no. 1552, 1986. https://www.cis.es/visor?migrado=true&fichero=cru1552edad-html; and 40dB. *Radiografía de la lectura en el siglo XXI*. https://elpais.com/babelia/2024-11-23/consulte-todos-los-datos-internos-de-la-encuesta-sobre-el-lector-espanol-del-siglo-xxi-cuestionarios-cruces-y-respuestas-individuales.html.

Average daily social media use refers to the 1980s, when there were no social networks, and 2025. See: We Are Social. *Digital Report 2025*. London, 2025. https://wearesocial.com/uk/blog/2025/02/digital-2025/.

The number of relatives of a Spanish woman aged 30 to 34 has been estimated for 1990–1995 and 2025–2030 based on Alburez-Gutierrez, Williams and Caswell. See: Alburez-Gutierrez, Diego, Iván Williams, and Hal Caswell. "Projections of human kinship for all countries." *PNAS* 120, no. 52, 2023. https://doi.org/10.1073/pnas.2315722120.

Road passenger transport refers to 1980 and 2023; the per capita figure has been calculated by dividing by Spain's total population in the respective years. See: INE. *Población residente por fecha, sexo y edad (desde 1971)*. https://www.ine.es/jaxiT3/Tabla.htm?t=56934; Instituto de Estudios de Transportes y Comunicaciones. *Estadísticas de transportes. Series cronológicas (1950-1980)*. Madrid, 1983. https://www.fomento.gob.es/AZ.BBMF.Web/documentacion/pdf/M00386_1983.pdf; and Ministerio de Transporte y Movilidad Sostenible. *Observatorio del Transporte y la logística en España. Transporte interior de viajeros (viajeros-kilómetro) por modo*. https://apps.fomento.gob.es/BDOTLE/visorBDpop.aspx?i=547.

Per capita meat consumption refers to 1990 and 2023, and consumption of ready meals to 1999 and 2023. See: Ministerio de Agricultura, Pesca y Alimentación. *Panel de consumo alimentario. Series anuales. Socioeconómico: consumo per cápita*. https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

The percentage of daily smokers among the population over 15 refers to 1987 and 2020; daily alcohol consumers, to 1995 and 2020. See: INE. *Encuesta europea de salud 2020*. https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p420/a2019/p06/&file=pcaxis; OECD. *Tobacco consumption*. https://data-explorer.oecd.org/; and Plan Nacional sobre Drogas. "Encuesta domiciliaria sobre uso de drogas 1995. Principales resultados." Ministerio de Sanidad. https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas_EDADES.htm.

The prevalence of obesity among the population over 15 refers to 1987 and 2020. See: Feijoo, Laura, et al. "Prevalencia de la obesidad en España y en sus comunidades autónomas, 1987-2020." *Revista Española de Cardiología* 77, 2024. https://doi.org/10.1016/j.recesp.2023.12.019.

Data on the proportion of the population born abroad in 1991 and 2025: INE. *Censos de Población y Viviendas 1991*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=resultados&idp=1254735572981; and *Estadística continua de población*. https://www.ine.es/jaxiT3/Datos.htm?t=56938.

6 In the mid-1990s, 23% of marriages in Spain were civil ceremonies, whereas in 2023 they accounted for 82% of the total. See: INE. *Estadística de matrimonios*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736176999&menu=resultados&idp=1254735573002.

In 2021, 79% of Spaniards considered divorce the best solution when there are marital problems. See: Centro de Investigaciones Sociológicas. *Familia y Género (II) (ISSP)*. Study no. 2942, 2012. https://www.cis.es/documents/d/cis/es2942pdf.

In 1990, 46% of the Spanish population thought homosexuality was not justifiable, while in 2017 only 19% thought so. See: Inglehart, Ronald, et al. (eds.). *World Values Survey: All Rounds – Country-Pooled Datafile*. https://www.worldvaluessurvey.org/WVSOnline.jsp.

In the late 1980s, the activity rate of Spanish women was around 30%, compared with 69% for men. In 2024, these percentages were 54% and 64%, respectively. See: INE. *Encuesta de población activa. Tasa de actividad por sexo*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736176918&menu=resultados&idp=1254735976595#_tabs-1254736195129.

Only 6% of the people elected to the Congress of Deputies in the 1977 elections were women. In 2023, the year of the latest general election, the figure was 44%. See: Fuera de agenda – Blog del Congreso de los Diputados. "De las 21 de la Constituyente hasta hoy." https://blog.congreso.es/de-las-21-de-la-constituyente-hasta-hoy-las-mujeres-que-nos-han-representado-en-el-congreso/; and INE. *Mujeres en el Congreso de los Diputados y en el Senado*. https://www.ine.es/ss/Satellite?L=es_ES&c=INESeccion_C&cid=1259925595398&p=1254735110672&pagename=ProductosYServicios%2FPYSLayout&param1=PYSDetalle&param3=1259924822888.

In 1988, 87.8% of the Spanish population declared itself Catholic. In 2024, this percentage had fallen to 55.2%. See: CIS. *Barómetro de diciembre de 1988*. Study no. 1778. https://www.cis.es/documents/d/cis/es1778mar-pdf; and *Turismo y gastronomía (II)*. Study no. 3471, 2024. https://www.cis.es/documents/d/cis/es3471mar-pdf. Whereas in 1994 39.8% of the Spanish population did not consider euthanasia justifiable, in 2021 72.3% agreed with it. See: CIS. *Barómetro de enero de 2021*. Study no. 3307. https://www.cis.es/documents/d/cis/es3307marpdf; and *Valores y dinámica intergeneracional. Población adulta*. Study no. 2107, 1994. https://www.cis.es/visor?migrado=true&fichero=e210700html.

In recent decades, Spain has stood out as one of the first countries in the world to legalise same-sex marriage, time-limit abortion, gender self-determination and assisted dying. As a result, it is currently one of the most advanced countries in recognising rights related to gender equality, sexual diversity and dignified death. It ranks 4th in the Gender Equality Index, 3rd in the LGTB Equality Index and 4th in the Rainbow Map. See: EQUALDEX. https://www.equaldex.com/region/spain; European Institute for Gender Equality. https://eige.europa.eu/gender-equality-index/2024/country/ES; ILGA-Europe. https://rainbowmap.ilga-europe.org/countries/spain/; and World Federation of Right to Die Societies. https://wfrtds.org/worldmap/.

7 The trend towards the de-standardisation of family formation processes falls within what is known as the Second Demographic Transition, in which most Western countries have taken part since the second half of the 20th century. It is characterised, among other things, by a decline in the birth rate, greater household diversity, the decoupling of marriage and procreation, and a change in values and attitudes regarding divorce, homosexuality or the choice not to have children. Compared with neighbouring countries, the pattern of family formation in Spain has been characterised by prolonged co-residence with parents and a late transition to cohabitation, resulting in high synchronisation between leaving home, forming a couple and first birth. See, among others: Baizán, Pau, Arnstein Aassve, and Francesco C. Billari. "Cohabitation, marriage, and first birth: The interrelationship of family formation events in Spain." *European Journal of Population* 19, 2003. https://doi.org/10.1023/A:1023343001627; Domínguez Folgueras, Marta, and Teresa Castro Martín. "Cohabitation in Spain: No longer a marginal path to family formation." *Journal of Marriage and Family* 75, no. 2, 2013; and Seiz, Marta, et al. "La evolución de las normas sociales relativas a las transiciones familiares en España." *Revista Española de Sociología* 31, no. 2, 2022. https://doi.org/10.22325/fes/res.2022.106.

8 Data are for Spanish women. See: Eurostat. *Estimated average age of young people leaving the parental household by sex* [yth_demo_030]. https://ec.europa.eu/eurostat/data/database; INE. *Edad media al primer matrimonio según sexo y nacionalidad*. https://www.ine.es/jaxiT3/Tabla.htm?t=1380&L=0; and *Edad media a la maternidad por orden del nacimiento*. https://www.ine.es/jaxiT3/Tabla.htm?t=1579&L=0.

9 In the early 1980s, 85% of young women aged 30 to 34 in Spain were married. Since then, the percentage of young women living with a spouse or stable partner has progressively declined to 59% in 2024. For young people aged 30 to 34 (women and men), these percentages were 83% and 52% respectively. See: INE. *Censo de población y viviendas de 1981*. https://www.ine.es/jaxi/Tabla.htm?path=/t20/e243/e01/a1981/l0/&file=01009.px&L=0; *Censo de 1991. Estado civil*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=resultados&idp=1254735572981; and *Encuesta de condiciones de vida. Porcentaje de mujeres en pareja (con base jurídica), en pareja (sin base jurídica) o solteras (no en pareja)*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&idp=1254735976608#_tabs-1254736195153.

10 Data from: INE. *Censo de población y viviendas de 1981*; *Censo de 1991. Estado civil*; and *Encuesta de condiciones de vida* (same sources as note 9).

11 The percentage of married women among all women aged 30 to 34 fell from 85% in 1981 to 37% in 2023. Meanwhile, the percentage of births to unmarried mothers rose from 4% in 1981 to 50% in 2023. That same year, civil marriages reached 82%, while religious marriages accounted for 18% of the total. See: INE. *Censo de población y viviendas de 1981*.

https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176992&menu=resultados&idp=1254735572981#_tabs-1254736195813; *Encuesta de condiciones de vida. Estado civil*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&idp=1254735976608#_tabs-1254736195153; *Matrimonios por provincia de residencia del matrimonio, mes y forma de celebración*. https://www.ine.es/jaxiT3/Tabla.htm?t=37641&L=0; and *Proporción de nacidos de madre no casada*. https://www.ine.es/jaxiT3/Tabla.htm?t=1410&L=0.

On the number of partners over a lifetime, see: CIS. *Relaciones sexuales y de pareja*. Study no. 3501, 2025. https://www.cis.es/documents/d/cis/es3501mar-pdf.

The percentage of Spaniards who accept that members of a couple live together even without intending to marry has been rising: 60% in 1994 and 83% in 2012. Likewise, most Spaniards consider divorce the best solution when there are marital problems: 72% in 1994 and 79% in 2012. See: CIS. *Familia y Género (II) (ISSP)*. Study no. 2942, 2012. https://www.cis.es/documents/d/cis/es2942pdf; and *Familia y Roles de Género Cambiantes (ISSP)*. Study no. 2113, 1994. https://www.cis.es/detalle-ficha-estudio?origen=estudio&idEstudio=1104. On the history of attitudes towards cohabitation and divorce in Spain, see, among others: Becerril Ruiz, Diego. "La percepción social del divorcio en España." *REIS* 123, 2008. https://doi.org/10.5477/cis/reis.123.187; and Seiz, Marta, et al. (2022), cited in note 7.

The divorce rate per 1,000 inhabitants grew steadily from 0.3 in 1981 to 1.2 in 2004, and reached its historical peak just after the 2005 reform: 2.9 in 2006. In recent years it has remained stable at around 2. See: BOE. Law 15/2005, of 8 July, amending the Civil Code and the Civil Procedure Law regarding separation and divorce. https://www.boe.es/eli/es/l/2005/07/08/15; Law 30/1981, of 7 July, amending the regulation of marriage in the Civil Code. https://www.boe.es/eli/es/l/1981/07/07/30; and Eurostat. *Crude divorce rate* [demo_ndivind]. https://ec.europa.eu/eurostat/databrowser/.

12 For more information on the evolution of same-sex unions and unions between Spanish and foreign nationals, see: INE. *Encuesta Continua de Hogares (ECH). Número de parejas según nacionalidad de la pareja y tipo de unión*. https://www.ine.es/jaxi/Datos.htm?path=/t20/p274/serie/prov/p01/l0/&file=01019.px; and *Número de parejas según tipo de unión y sexo de la pareja*. https://www.ine.es/jaxi/Tabla.htm?path=/t20/p274/serie/prov/p01/l0/&file=01018.px&L=0.

13 In Spain, the fertility rate was 1.49 children per woman in 1987 and 1.26 in 2018. Since then, it has fallen to 1.12 in 2023. The rate varies with variables such as mean age at motherhood or migration balances, giving rise to different projections for 2050. INE and Eurostat project baseline scenarios with fertility rates of 1.29 and 1.33 children per woman respectively; the United Nations projects a higher baseline (1.36) and the Global Burden of Disease a lower one (1.23). As regards the impact of migration flows, foreign women resident in Spain have progressively adopted the reproductive patterns of Spanish-national women. In just twenty-one years, they have reduced their fertility rate from 1.86 to 1.28 children. Thus, in 2023, the fertility rate was 1.09 for women of Spanish nationality and 1.28 for women of foreign nationality. See: Bhattacharjee, Natalia V., et al. "Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100." *The Lancet* 403, no. 10440, 2024. https://doi.org/10.1016/S0140-6736(24)00550-6; Eurostat [proj_23naasfr]; INE. *Proyección de la población de España 2024-2074. Indicador coyuntural de fecundidad por año*. https://www.ine.es/jaxiT3/Tabla.htm?t=36655&L=0; https://www.ine.es/jaxiT3/Tabla.htm?t=1407&L=0; and UN Population Division. *Total fertility rate*. https://population.un.org/dataportal/.

According to INE projections, the mean age at first motherhood in 2050 will be 32. However, we consider that a woman born in 2018 is most likely to have her first child after the age of 35 if the percentage of women who have already become mothers by age group remains stable. In 2018, the latest available data, 48% of women aged 30–34, 72% of those aged 35–39 and 81% of those aged 40–44 had had children. In 2023, the mean age at first motherhood was 31.5. See: INE. *Encuesta de fecundidad 2018. Mujeres según el número de hijos y edad*. https://www.ine.es/jaxi/Tabla.htm?tpx=30236&L=0; https://www.ine.es/jaxiT3/Tabla.htm?t=1579&L=0; and https://www.ine.es/jaxiT3/Tabla.htm?t=36656&L=0.

Likewise, according to INE projections, in 2050 around 10% of births will be to mothers over 40 and 9% to mothers under 25. In 2024, these percentages were 10.4% and 9.6%, while in 1987 they were 2% and 29%, respectively. See: INE. *Nacimientos por edad de la madre y orden de nacimiento*. https://www.ine.es/jaxiT3/Tabla.htm?t=31949&L=0; and *Nacimientos de madre residente en España, por sexo, edad de la madre y año*. https://www.ine.es/jaxiT3/Tabla.htm?t=36645&L=0. In 2018, 18% of Spanish women aged 35 to 39 stated that they had not had children for health reasons. This rose to 19% among women aged 40 to 44 and 22.5% among those aged 45 to 49.

14 Fertility rate data for Spain, detailed by mother's nationality, come from INE. The EU-8 fertility rate is an average of Austria, Belgium, Denmark, Finland, France, Germany, the Netherlands and Sweden, obtained from the Human Fertility Database (1980–2010) and Eurostat (2011–2022). See: Eurostat. *Total fertility rate* [tps00199]. https://ec.europa.eu/eurostat/data/database; Human Fertility Database. https://www.humanfertility.org/Home/Index; and INE. https://www.ine.es/jaxiT3/Tabla.htm?t=1407&L=0.

15 In Spain, in 1985, fewer than 1% of women aged 30 to 34 said they did not want children, 5% preferred one child, 52% two and 43% three or more. In 2018, preferences in the same age group were different: 11% did not want children, 16% preferred one, 48% two and 25% three or more. See: INE. *Encuesta de fecundidad 1985. Número de hijos deseados*; and *Encuesta de fecundidad 2018. Número de hijos que le gustaría o le hubiera gustado tener*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177006&menu=resultados&idp=1254735573002. On research into fertility intentions, see: Ajzen, Icek, and Jane Klobas. "Fertility intentions: An approach based on the theory of planned behavior." *Demographic Research* 29, 2013. https://doi.org/10.4054/DemRes.2013.29.8; and Dommermuth, Lars, Jane Klobas, and Trude Lappegård. "Realization of fertility intentions by different time frames." *Advances in Life Course Research* 24, 2015. https://doi.org/10.1016/j.alcr.2015.02.001.

16 In the Nordic countries, between 2012 and 2022, the fertility rate fell from 1.73 to 1.55 in Denmark, from 1.80 to 1.32 in Finland, and from 1.91 to 1.53 in Sweden. See: Eurostat [tps00199];

and Hellstrand, Julia, et al. "Not Just Later, but Fewer: Novel Trends in Cohort Fertility in the Nordic Countries." *Demography* 58, no. 4, 2021. https://doi.org/10.1215/00703370-9373618. Regarding immigrant women, evidence shows that they have higher fertility levels than native women, especially in the first years after arrival, which helps partially sustain aggregate fertility without reversing its downward trend. See: https://www.demographic-research.org/articles/volume/49/22.

17 Data were obtained from the microdata of INE's Fertility Survey, conducted in 1985 and 2018. See: INE. *Encuesta de fecundidad 1985* and *2018. Número de hijos biológicos por mujer*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177006&menu=resultados&idp=1254735573002.

18 In recent decades in Spain, the social meaning of femininity and motherhood has changed, increasing social acceptance of the decision not to have children. While in 2006 only 43% of women aged 35 to 44 considered not having children a valid life option, in 2018 70% of women in that age group accepted it. See: European Social Survey. Round 3 (2006) and Round 9 (2018) [anvcld]. https://www.europeansocialsurvey.org/data-portal.

19 On the evolution of women reaching 40 without children, see: Max Planck Institute for Demographic Research and Vienna Institute of Demography. *Human Fertility Database*. www.humanfertility.org. In 2018, in Spain, the percentage of women without biological children at the end of their fertile life (aged 50 or over) reached 20%, while for men in the same age group it reached 26%. Given the increase observed between 1985 and 2018 in the percentage of women without biological children at the end of their fertile life, from 12% to 20%, we consider that at least one in four women and one in three men of generation Alpha could have no children. Furthermore, in 2024, 22% of households formed by two adults aged 40 to 44 and 31% of those formed by two adults aged 35 to 39 had no dependent children. In 2004, these figures were 16% and 21%. See: INE. *Encuesta de condiciones de vida. Tipo de hogar según número de convivientes y/o menores a cargo por grupo de edad*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&idp=1254735976608#_tabs-1254736195153; and *Encuesta de fecundidad 2018. Número de hijos biológicos*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177006&menu=ultiDatos&idp=1254735573002.

20 In 2024, 23% of young Spaniards aged 18 to 24 said that climate change influenced their decision about having children. This phenomenon is not exclusive to Spain: the percentage of young people aged 16 to 25 who expressed doubts about having children because of climate change in 2021 was 37% in Portugal and France, 38% in the United Kingdom and 42% in Finland. See: Hickman, Caroline, et al. "Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey." *The Lancet Planetary Health* 5, no. 12, 2021. https://doi.org/10.1016/S2542-5196(21)00278-3; and CIS. *Fecundidad, familia e infancia*. Study no. 3475, 2024. https://www.cis.es/documents/d/cis/es3475mar-pdf.

The shift towards child-rearing with greater presence of fathers and mothers can make parenthood more "costly", creating conflicts with the demands of the labour market in terms of time commitment. Looking ahead, there is a debate about whether the telework trend could reduce or intensify this conflict. See, among others: Blair-Loy, Mary. *Competing devotions: Career and family among women executives*. Cambridge: Harvard University Press, 2005; Chung, Heejung, and Mariska Van der Horst. "Women's employment patterns after childbirth and the perceived access to and use of flexitime and teleworking." *Human Relations* 71, no. 1, 2018. https://doi.org/10.1177/0018726717713828; and Sánchez-Mira, Núria, and Dafne Muntanyola Saura. "Attachment parenting among middle-class couples in Spain: gendered principles and labor divisions." *Journal of Family Studies* 28, no. 2, 2022. https://doi.org/10.1080/13229400.2020.1745258.

The percentage of couples living with non-shared children reached 6% in 2020. In just one decade, from 2013 to 2023, the percentage of divorces of heterosexual couples with minor children resolved with custody to the mother fell from 76% to 48%, while joint custody rose from 18% to 48%. See: INE. https://www.ine.es/jaxiT3/Tabla.htm?t=20692; and *Encuesta continua de hogares. Número de parejas según tipo de unión y convivencia con hijos*. https://www.ine.es/jaxi/Tabla.htm?path=/t20/p274/serie/prov/p01/l0/&file=01020.px&L=0.

21 On the importance of the partner in reproductive aspirations, see: Rutigliano, Roberta, and Gøsta Esping-Andersen. "Partnership choice and childbearing in Norway and Spain." *European Journal of Population* 34.3, 2018. https://link.springer.com/article/10.1007/s10680-017-9432-6; and Sturm, Nadia, Judith C. Koops, and Roberta Rutigliano. "The influence of partnership status on fertility intentions of childless women and men across European countries." *European Journal of Population* 39.1, 2023. https://link.springer.com/article/10.1007/s10680-023-09664-5.

22 On couples who decide not to live together, see, among others: Ayuso Sánchez, Luis. "Living Apart Together en España. ¿Noviazgos o Parejas Independientes?" *Revista Internacional de Sociología* 70, no. 3, 2012. https://doi.org/10.3989/ris.2011.07.18; and "What Future Awaits Couples Living Apart Together (LAT)?" *The Sociological Review* 67, no. 1, 2019. https://doi.org/10.1177/0038026118799053.

23 In 2022, the latest available data, approximately 12% of all births in Spain were linked to assisted reproduction techniques. The percentage has been calculated as the number of births through assisted reproduction over total births during the last quarter of 2022 and the first three quarters of 2023. See: INE. *Encuesta de fecundidad 2018. Mujeres que no están embarazadas y no han tenido hijos según el motivo más importante de este hecho y edad*. https://www.ine.es/jaxi/Tabla.htm?tpx=30293&L=0; *Nacimientos por mes, edad de la madre y sexo del nacido*. https://www.ine.es/jaxiT3/Tabla.htm?t=31932&L=0; and Ministerio de Sanidad. *Informe Estadístico de Técnicas de Reproducción Humana Asistida 2022*. https://www.registrosef.com/public/docs/sef2022_IAFIV.pdf.
On the relationship between educational level and use of assisted reproduction, see, among others: Goisis, Alice, et al. "Educational gradients in the prevalence of medically assisted reproduction births in a comparative perspective." *Fertility and Sterility* 122, no. 4, 2024. https://doi.org/10.1016/j.fertnstert.2024.05.149.

24 Between 1991 and 2022, the proportion of single-person households rose from 11% to 24%. See: García, Jesús, Albert

Esteve and Juan Galeano. “Hogares en transformación en España y Portugal.” Observatorio Social Fundación “la Caixa”. https://elobservatoriosocial.fundacionlacaixa.org/es/-/hogares-en-transformacion-en-espana-y-portugal. On the evolution of average household size, average dwelling floor area and number of bedrooms, see: INE. *Censo de población y viviendas 1991 y 2021*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=ultiDatos&idp=1254735572981; *Encuesta de Características Esenciales de la Población y Viviendas. Año 2021*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177092&menu=resultados&idp=1254735572981#_tabs-1254736195790; and *Proyecciones de hogares*. https://www.ine.es/dynt3/inebase/index.htm?padre=8850&capsel=8850.

25 For more information, see: Guerrero, Belinda. “Distribución Open Concept, todo lo que debes saber sobre la tendencia de espacios abiertos.” *Nuevo Estilo*, https://www.micasarevista.com/ideas-decoracion/g119211/distribucion-open-concept/; Nogueras, Albert. “El pasillo ha muerto, vuelve el ‘enfilade’: ¿por qué están cambiando nuestras casas?” *El Diario*, https://www.eldiario.es/consumoclaro/pasillo-muerto-vuelve-enfilade-cambiando-casas_1_10962568.html; and Pinto Campos, Bruna Caroline. “Arquitectura y diseño flexible: una revisión para una construcción más sostenible.” Doctoral thesis, Universitat Politècnica de Catalunya, 2019. http://dx.doi.org/10.5821/dissertation-2117-176433.

26 According to INE projections, in 2050 young people aged 18 to 24 will represent 6% of Spain’s adult population, while those aged 25 to 39 will reach 17%. The largest group will be adults aged 40 to 64, at 33%. As for the older population, people aged 65 to 79 will account for 19% of the total, and those aged 80 or over will reach 11%. Minors will represent only 14% of the total population. In addition, people born abroad are estimated to make up 32% of the total. In terms of family structure, single-person households will grow significantly to 37% of all households (in 2025 they accounted for 28%). Non-family cohabitation is also expected to increase; it has risen from 1% in 1991 to 8% in 2021. See: INE. *Censo de población y viviendas 1991. Hogares. Tipo de hogar*. https://www.ine.es/censo91/es/seleccion_ambito.jsp; *Estadística continua de población. Hogares de personas residentes en viviendas familiares por fecha y tamaño del hogar*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736177095&menu=resultados&idp=1254735572981#_tabs-1254736195805; *Proyecciones de hogares*. https://www.ine.es/dynt3/inebase/index.htm?padre=8850&capsel=8850; and *Proyecciones de población 2024-2074. Población residente en España a 1 de enero, por lugar de nacimiento y año*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176953&menu=ultiDatos&idp=125473557298.

In 2023, and assuming one pet per household, 54% of households in Spain had a pet. That year there were 19.2 million households and 10.5 million animals registered with a microchip, of which 88% were dogs and 12% cats. See: INE. https://www.ine.es/dynt3/inebase/index.htm?padre=9620&capsel=9620; and Red Española de Identificación de Animales de Compañía. *Estadísticas*. https://www.reiac.es/reiac-info-02.php?lang=ESP.

27 On the relationship between residential mobility, social cohesion and mental health, see: Cho, Youngmin. “The association between residential mobility and adolescents’ health: The mediating role of neighborhood social cohesion.” *Journal of Community Psychology* 48, 2020. https://doi.org/10.1002/jcop.22341; Oishi, Shigehiro, and Shelly Tsang. “The socio-ecological psychology of residential mobility.” *Journal of Consumer Psychology* 32, 2022. https://doi.org/10.1002/jcpy.1310; and Thompson, Sian E. L., Hazel Easthope, and Gethin Davison. “Including the majority: Examining the local social interactions of renters in four case study condominiums in Sydney.” *Journal of Urban Affairs* 46, 2022. https://doi.org/10.1080/07352166.2022.2045869.

28 Between 1988 and 2021, residential turnover increased notably in Spain. In 1988, 589,087 changes of address were recorded (1.6 per 100 people), while in 2021 the figure rose to 2,131,160 (5.9 per 100 people). Despite this growth, Spain remains one of the OECD countries with the lowest residential turnover. See: Causa, Orsetta, and Jacob Pichelmann. *Should I stay or should I go? Housing and residential mobility across OECD countries*. Paris: OECD Publishing, 2020. https://dx.doi.org/10.1787/d91329c2-en; INE. *Censo de población y viviendas 1991. Relación residencia actual y en 1981*. https://www.ine.es/censo91/es/estructura.jsp?k=MDDB.COLECTIVO_P2C91; *Censo de población y viviendas 2021. Relación entre residencia en 2011 y actual*. https://www.ine.es/Censo2021/Wizard.do?WIZARD=2&reqCode=pasoSeleccionColectivo; and *Estadística de variaciones residenciales*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177013&menu=ultiDatos&idp=1254734710990.

29 In 1991, 12% of Spain’s adult population were young people aged 18 to 24, while 21% were young adults (aged 25 to 39). 28% belonged to the group of adults aged 40 to 64, 10% were older people aged 65 to 79, and 2% were 80 or over. Minors represented 27% of the total population. In addition, single-person households made up 13% of all households. In 1987, people born abroad represented barely 2% of the Spanish population. See: INE. *Censo de población y viviendas 1991*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=ultiDatos&idp=1254735572981; *Proyecciones de hogares*. https://www.ine.es/dynt3/inebase/index.htm?padre=8850&capsel=8850; and *Proyecciones de población 2024-2074*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176953&menu=ultiDatos&idp=125473557298.

30 The percentage of the Spanish population living in cities of more than 300,000 inhabitants has been estimated using UN population projections for urban agglomerations up to 2035. For 2050, the UN projects that 88% of the Spanish population will live in urban areas, six percentage points more than in 2025. See: United Nations. *World Urbanization Prospects 2018. Percentage of population in urban and rural areas*. https://population.un.org/wup/Country-Profiles/; and *Percentage of the Total Population Residing in Each Urban Agglomeration with 300,000 Inhabitants or More in 2018, by country, 1950-2035*. https://population.un.org/wup/downloads?tab=Urban%20Agglomerations.

31 In 1987, the mean age of leaving the parental home in Spain (taking as reference the mean age at marriage, which at that time coincided) was 26.1. Over the last two decades the mean age has risen by one year, reaching 30.4 in 2023, when 76% of young people aged 30 to 34 had already left home. See: INE.

Encuesta de población activa. Población en viviendas familiares por relación de parentesco con la persona de referencia. https://www.ine.es/jaxiT3/Tabla.htm?t=65944; *Indicadores de Primo-Nupcialidad. Edad Media al Primer Matrimonio*. https://www.ine.es/jaxiT3/Tabla.htm?t=1380; Eurostat [yth_demo_030]. https://ec.europa.eu/eurostat/data/database; and Miret Gamundi, Pau. "Pautas longitudinales de emancipación juvenil en España (cohortes de nacimiento 1924-1968)." In Anna Cabré Pla (dir.). *La constitución familiar en España*. Bilbao: Fundación BBVA, 2007. 41–91. https://www.fbbva.es/wp-content/uploads/2017/05/dat/DE_2007_constitucion_familiar.pdf.

32 In 2024, 43% of young people aged 30 to 34 in Spain were renting, whereas three decades earlier, in 1991, barely 6% of this age group did so. That same year, affordable rental accounted for 6% of households in this age group. See: INE. *Censo de población y viviendas 1991. Viviendas y locales. Régimen de tenencia (agregado)*. https://www.ine.es/censo91/es/filtro.jsp; *Encuesta de condiciones de vida. Hogares por régimen de tenencia de la vivienda*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&idp=1254735976608#_tabs-1254736195153; and Leal Maldonado, Jesús, and Almudena Martínez del Olmo. "El ocaso de un modelo de vivienda de difícil reemplazo." *Ciudad y Territorio Estudios Territoriales* 53, 2021. https://doi.org/10.37230/CyTET.2021.M21.03. On the evolution of the population by age and municipality size, see: INE. *Censo de población y viviendas 1981, 1991, 2001, 2011 y 2021. Personas. Tamaño del municipio de residencia*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=resultados&idp=1254735572981.

33 In 2019, 81% of young people aged 30 to 34 in Spain preferred to own their home, compared with 13% who preferred to rent. Buying a home is usually linked to the decision to have children, since it makes it easier to adapt the space to family needs and offers residential stability, which is key in the early years of family formation. In fact, despite access difficulties, in 2023 51% of households whose reference person was aged 30 to 34 owned a home, rising to 57% for young households aged 35 to 39. See: CIS. *Barómetro de Junio 2019*. Study no. 3252, 2019. https://www.cis.es/documents/d/guest/es3252marpdf; INE. *Censo de población y viviendas 1991. Viviendas y locales. Régimen de tenencia (agregado)*. https://www.ine.es/censo91/es/inicio.jsp; *Encuesta de condiciones de vida. Hogares por régimen de tenencia de la vivienda* (same URL as note 32); Leal Maldonado and Martínez del Olmo (2021), cited in note 32; and Silestone Institute. *Hogar Z. La vivienda del futuro de la generación Z en España*. Madrid, 2023. https://silestoneinstitute.com/wp-content/uploads/2023/02/IS_Generacion_Z_020223_compressed.pdf.

34 Information for 1991 comes from the Population and Housing Census, while data for 2004–2024 come from the Living Conditions Survey. See: INE. *Censo de población y viviendas 1991. Viviendas y locales. Régimen de tenencia (agregado)*. https://www.ine.es/censo91/es/filtro.jsp; and *Encuesta de condiciones de vida. Hogares por régimen de tenencia de la vivienda*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&idp=1254735976608#_tabs-1254736195153.

35 Madrid, Barcelona, Alicante, the Balearic Islands and Málaga are estimated to account for 57% of the absolute population growth projected for 2024–2039. See: INE. *Proyecciones de población. Resultados por provincias: serie 2024-2039*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=6675&capsel=6681.

On the concentration of job and educational opportunities in urban areas, see: De la Roca, Jorge, and Diego Puga. "Learning by working in big cities." *Review of Economic Studies* 84, no. 1, 2017. https://doi.org/10.1093/restud/rdw031; Escolano Utrilla, Severino, and Ana Isabel Pilar Escalona Orcao. "Especialización, concentración y aglomeración espacial de los servicios intensivos en conocimiento en España." *Documents d'Anàlisi Geogràfica* 63, no. 1, 2017. http://dx.doi.org/10.5565/rev/dag.328; and Goerlich, Francisco J., and Ernest Reig (dirs.). *Las áreas urbanas funcionales en España. Economía y calidad de vida*. Bilbao: Fundación BBVA, 2020. https://www.fbbva.es/wp-content/uploads/2020/06/DE2020_areas-urbanas-funcionales_ivie_web.pdf.

In 2024, 88% of people over 65 in Spain owned a home, a proportion that has remained stable after rising from 70% to 85% between 1970 and 1991. In 2023, more than 150,000 homes are estimated to have entered the market following the deaths of older people. This figure has been increasing since the 1970s and will keep growing until at least 2060. The projections are based on deaths of people over 65, considering two key factors: average household size and the ownership rate within this group. For example, if in a given period ten people over 65 die and the average household in this group has two people, approximately five homes would become vacant. Of these, since around 90% of households in this age range are owners, up to a maximum of four could be put up for sale or rent. See: Asensio, Marina, et al. *Demografía, vivienda y brechas de riqueza*. Madrid: Fundación AFI Emilio Ontiveros, 2024. https://fundacionafi.org/demografia-vivienda-y-brechas-de-riqueza/; INE. *Censo de población y viviendas 1970, 1981, 1991 y 2001. Viviendas. Régimen de tenencia*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=resultados&idp=1254735572981; *Encuesta de condiciones de vida. Hogares por régimen de tenencia de la vivienda*; *Encuesta de población activa. Hogares por número de activos y número de personas*. https://www.ine.es/dynt3/inebase/index.htm?padre=10904&capsel=10905; *Proyecciones de hogares*. https://www.ine.es/jaxiT3/Tabla.htm?t=54562; *Tablas de Mortalidad proyectadas 2024-2073*. https://www.ine.es/dynt3/inebase/index.htm?padre=6671&capsel=6672; and *Tablas de mortalidad por año, sexo, edad y funciones*. https://www.ine.es/jaxiT3/Tabla.htm?t=27153&L=0.

36 On collaborative housing in Spain, see: Valenzuela, Manuel. "Nuevos modelos habitacionales. La vivienda colaborativa o cohousing: una aproximación a su implantación en España." *Boletín de la Real Sociedad Geográfica* CLXI, 2023. https://www.boletinrsg.com/index.php/boletinrsg/article/view/220.

37 For more information, see: Gobierno de España. "El Gobierno favorece la creación de 65.000 plazas públicas y gratuitas para escolarizar a niños de 0 a 3 años." Plan de Recuperación, Transformación y Resiliencia, https://planderecuperacion.gob.es/noticias/el-gobierno-favorece-la-creacion-de-65000-plazas-publicas-y-gratuitas-para-escolarizar.

38 In 2023, Sweden, Norway and Denmark recorded participation rates in education services at age two of 91%, 95% and 87% respectively, among the highest in the OECD. Data from: OECD. *Education at a Glance 2025. OECD Indicators*. Paris: OECD Publishing, 2025. https://doi.org/10.1787/1c0d9c79-en.

In Spain, in the 1967/68 school year, around 90% of children began formal schooling at age six, coinciding with compulsory education. In the 1988/89 school year, only 4% of children under two were enrolled, while the figure rose to 87% for four-year-olds. Progress in access to early education meant that, in the 2023/24 school year, 73% of two-year-olds were enrolled in educational programmes. See: Ministerio de Educación, Formación Profesional y Deportes. *Tasas netas de escolarización de 0 a 5 años por comunidad autónoma/provincia y edad*. https://estadisticas.educacion.gob.es/EducaJaxiPx/Tabla.htm?path=/no-universitaria/alumnado/matriculado/2023-2024-da/comunidad/reg_general/l0/&file=general_1_03.px&L=0; *Publicaciones de la Estadística de la Educación en España Curso 1967-1968. Matriculados, por edad y enseñanza*; and *Curso 1988-1989. Tasas de escolaridad, por edad y enseñanza*. Madrid: INE, 2017. https://www.educacionfpydeportes.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/cursos-anteriores.html.

On women's entry into the labour market in Spain and the role of the family, especially grandmothers, in informal care during the first years of life, see: Hupkau, Claudia, and Jenifer Ruiz-Valenzuela. "Work and children in Spain: challenges and opportunities for equality between men and women." *SERIEs* 13, no. 1–2, 2022. https://doi.org/10.1007/s13209-021-00243-7; Meil, Gerardo, et al. "Non-Parental Childcare in France, Norway, and Spain." In Anna Maija Castrén, et al. (eds.). *The Palgrave Handbook of Family Sociology in Europe*. Cham: Palgrave Macmillan, 2021. https://doi.org/10.1007/978-3-030-73306-3; and Moreno Fuentes, Francisco Javier, et al. "New Social Risks and Welfare State Reforms in Norway and Spain." *GIGAPP Working Papers* 2015/01, 2015. https://www.gigapp.org/administrator/components/com_jresearch/files/publications/WP-2015-01.pdf.

39 The percentage of children under one year enrolled in school has risen from around 9% in 2010 to about 16% in 2023. If this trend continues, in 2050 participation in formal education would remain a minority in this age group, so most children under one would continue to be cared for at home. Data from: INE. *Tasas netas de escolarización en educación infantil por edad y curso. CNED-2000*. https://www.ine.es/jaxiT3/Datos.htm?t=12539; and *CNED-2014*. https://www.ine.es/jaxiT3/Datos.htm?t=13228.

40 For more information, see: BOE. Royal Decree-Law 6/2019, of 1 March, on urgent measures to guarantee equal treatment and opportunities for women and men in employment and occupation. https://www.boe.es/buscar/act.php?id=BOE-A-2019-3244; Ministerio de Derechos Sociales, Consumo y Agenda 2030. *Estrategia Estatal para un nuevo modelo de cuidados en la comunidad: un proceso de desinstitucionalización (2024-2030)*. https://www.dsca.gob.es/sites/default/files/publicaciones/Estrategia-modelo-cuidados.pdf; OECD. *Doing Better for Families*. Paris: OECD Publishing, 2011. http://dx.doi.org/10.1787/9789264098732-en; and Stahl, Juliane F., et al. "Parental socio-economic status and childcare quality: Early inequalities in educational opportunity?" *Early Childhood Research Quarterly*, 2018. https://doi.org/10.1016/j.ecresq.2017.10.011.

41 For more information, see: BOE. Organic Law 3/2020, of 29 December, amending Organic Law 2/2006, of 3 May, on Education. https://www.boe.es/buscar/doc.php?id=BOE-A-2020-17264; Goldin, Andrea P., et al. "Interplay of chronotype and school timing predicts school performance." *Nature Human Behaviour* 4, 2020. https://doi.org/10.1038/s41562-020-0820-2; Martin, Jeanne Sophie, et al. "Chronotype, Light Exposure, Sleep, and Daytime Functioning in High School Students Attending Morning or Afternoon School Shifts: An Actigraphic Study." *Journal of Biological Rhythms*, 2016. https://doi.org/10.1177/0748730415625510; and Ministerio de Educación, Formación Profesional y Deportes and Ministerio de Sanidad. *Guía de escuelas promotoras de salud*. Madrid, 2023. https://www.sanidad.gob.es/areas/promocionPrevencion/entornosSaludables/escuela/docs/guia_EscuelasPromotorasdeSalud.pdf.

42 In Spain, around 45% of students take part in creative activities, significantly lower than in Finland (70%), Sweden (68%) or the Netherlands (66%). In addition, only 57% say creativity is encouraged in their classes, six points below the OECD average. See: OECD. *PISA 2022 Results (Volume III): Creative Minds, Creative Schools*. Paris: OECD Publishing, 2024. https://doi.org/10.1787/765ee8c2-en.

43 Extracurricular activities help improve academic results. See: Palau, Arnau, Piia Af Ursin, and Jannick Demanet. "Social inequality in skills: Exploring the moderating role of extracurricular activities related to socio-economic differences in non-cognitive and cognitive outcomes." *European Journal of Education*, 2024. https://doi.org/10.1111/ejed.12670.

44 Complementary educational activities outside school hours (shadow education) include, among others, academic tutoring, languages, and artistic or sports activities. Access to them is conditioned by factors such as family income and educational level, which may contribute to reproducing educational inequalities and gender stereotypes. See: López-Agudo, Luis Alejandro, and Miguel Ángel Ropero-García. "Out-of-School Use of Time and Its Association with Gender Differences in Educational Outcomes." *Child Indicators Research*, 2019. https://doi.org/10.1007/s12187-019-09701-y; and Merino, Rafael, Albert Sánchez-Gelabert and Arnau Palou. "School attainment, family background and non-curricular activities: Reproduction of or compensation for social inequality?" *International Review of Education*, 2022. https://doi.org/10.1007/s11159-022-09969-3.

The *Tardes con Plan* programme promotes the expansion of free extracurricular activities aimed at fostering educational and healthy leisure, with special attention to children and adolescents in more vulnerable contexts. See: Ministerio de Sanidad. "Tardes con Plan." https://www.sanidad.gob.es/areas/promocionPrevencion/infanciaAdolescencia/infancia/obesidad/tardesConPlan/documentos/home.htm.

45 Data from: OECD. *OECD Family Database. Out-of-school-hours services* [Indicator PF4.3]. http://www.oecd.org/els/family/database.htm.

46 For more details on this model of schools, see: Bovina Center Montessori School. "Parent Coworking Space." https://www.bovinamontessori.com/co-working-space; Gallego Sánchez-Torija, et al. "Evaluación del confort térmico y la calidad de aire en centros docentes públicos en Madrid. Estudio de tres casos durante un año." *Informes de la Construcción*, 2022. https://doi.org/10.3989/ic.87607; Grand-Meyer, Eddy, Ivelina Ivanova and Agueda Gras-Velázquez. *COOLSCHOOLS:*

Realizing potentials of nature-based climate shelters in school environments for urban transformation. Brussels: European Schoolnet, 2025. https://zenodo.org/records/14966969; Sanz-Mas, Marta, et al. "Evaluating the effect of green, blue, and gray measures for climate change adaptation on children's well-being in schoolyards in Barcelona." *Landscape and Urban Planning*, 2025. https://doi.org/10.1016/j.landurbplan.2024.105206; Ørestad Gymnasium. "Our architecture." https://oerestadgym.dk/in-english/our-architecture/; and Tide Academy. "Mission and Vision." https://www.tideacademy.org/About/Mission-and-Vision/.

47 On the use of artificial intelligence to create personalised learning systems, see, among others: Baidoo-Anu, David, and Leticia Owusu Ansah. "Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning." *Journal of AI* 7, no. 1, 2023. https://doi.org/10.61969/jai.1337500; and Chiu, Thomas K. F., et al. "Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education." *Computers and Education: Artificial Intelligence* 4, 2023. https://doi.org/10.1016/j.caeai.2022.100118. On some experiences using AI systems to personalise teaching, see: BlinkLearning. https://www.blinklearning.com/portal/home?blinklang=ES; and Education Middle East. "AI tutors to enhance math learning outcomes in UAE schools." https://educationmiddleeast.com/news/ai-tutors-to-enhance-math-learning-outcome-in-uae-schools/.

48 A recent study shows that tutors who use artificial intelligence tools not only improve their students' academic performance but are also more likely to apply good teaching practices. See: Wang, Rose E., et al. "Tutor CoPilot: A human-AI approach for scaling real-time expertise." *arXiv*, 2025. https://arxiv.org/html/2410.03017v1.

Countries such as South Korea and Denmark are already using artificial intelligence algorithms for early detection of students at risk of repeating a year or leaving school early. In Spain, the Galician government has launched the EduGalIA project in the same spirit. See: Bogdan, Nicolae, et al. "High-School Dropout Prediction Using Machine Learning: A Danish Large-scale Study." In *ESANN 2015 Proceedings*, 319–324. Bruges: ESANN. https://web.archive.org/web/20200709051748id_/https://www.elen.ucl.ac.be/Proceedings/esann/esann-pdf/es2015-86.pdf; Chung, Jae Young, and Sunbok Lee. "Dropout early warning systems for high school students using machine learning." *Children and Youth Services Review* 96, 2019. https://doi.org/10.1016/j.childyouth.2018.11.030; and Xunta de Galicia. *EdugalIA. 34 retos para la disminución del abandono escolar temprano*. https://www.edu.xunta.gal/portal/sites/web/files/edugalia_34_retos_esp.pdf.

In Spain, the use of artificial intelligence as a support tool for teaching could free teachers from up to one working day a week. See: Oficina Nacional de Prospectiva y Estrategia (coord.). *HispanIA 2040. Cómo la IA mejorará nuestro futuro*. Madrid: Ministerio de la Presidencia, 2025. https://futuros.gob.es/sites/default/files/2025-01/HispanIA_2040.pdf.

49 On the effects of digital hyperconnection on childhood and youth, see: Blanchflower, David G., et al. "Further Evidence on the Global Decline in the Mental Health of the Young." *NBER Working Paper* 32500, 2024. https://www.nber.org/papers/w32500; Boletín Oficial de las Cortes Generales. *Proyecto de Ley Orgánica para la protección de las personas menores de edad en los entornos digitales*. https://www.congreso.es/public_oficiales/L15/CONG/BOCG/A/BOCG-15-A-52-1.PDF; Braghieri, Luca, Ro'ee Levy and Alexey Makarin. "Social Media and Mental Health." *American Economic Review* 112, no. 11, 2022. https://www.aeaweb.org/articles?id=10.1257/aer.20211218; Consejo Escolar del Estado. *El uso de dispositivos móviles en la educación del siglo XXI*. Madrid, 2024. https://fsie.es/documentos/Dispositivos_m%C3%B3viles_en_educaci%C3%B3n_Consejo_Escolar_del_Estado_junio_2024.pdf; Ministerio de la Presidencia, Justicia y Relaciones con las Cortes, Ministerio para la Transformación Digital y de la Función Pública, and Ministerio de Juventud e Infancia. *Informe técnico sobre la posible responsabilidad penal derivada de la generación y difusión de contenidos sexuales y pornografía infantil mediante IA en redes sociales*. Madrid, 2026. https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/presidencia/Documents/2026/170226-informe-delitos-redes-sociales.pdf; and Yu, Huijuan, et al. "Associations between screen time and emotional and behavioral problems among children and adolescents in US, National Health Interview Survey (NHIS), 2022." *Journal of Affective Disorders*, 2025. https://doi.org/10.1016/j.jad.2025.03.03.

50 Foreign students in non-university education have increased from 0.7% in 1994–1995 to 13.2% in 2024–2025. The population under 15 with foreign nationality has grown from 4% in 2002 (first year with data available) to 13% in 2023. Extrapolating the trend of both series since the beginning of this century, around 19% of students could have foreign nationality in 2050. See: Eurostat. *Population on 1 January by age group, sex and citizenship* [migr_pop1ctz]. https://ec.europa.eu/eurostat/web/main/data/database; and Ministerio de Educación, Formación Profesional y Deportes. *Enseñanzas no universitarias. Alumnado matriculado*; and *Alumnado extranjero por enseñanza*. https://www.educacionfpydeportes.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/series.html. Data on the proportion of the population born abroad in 1991 and 2025: INE. *Censos de Población y Viviendas 1991*. https://www.ine.es/dyngs/INEbase/operacion.htm?c=Estadistica_C&cid=1254736177108&menu=resultados&idp=1254735572981; and *Estadística continua de población*. https://www.ine.es/jaxiT3/Datos.htm?t=56938.

51 For more detail, see: Ministerio de Educación, Formación Profesional y Deportes. *TALIS 2024. Estudio internacional de la enseñanza y del aprendizaje*. Madrid, 2025. https://www.libreria.educacion.gob.es/libro/talis-2024-estudio-internacional-de-la-ensenanza-y-el-aprendizaje-informe-espanol_186331/.

52 The Territorial Cooperation Programme for Educational Guidance, Progress and Enrichment (PROA+) promotes actions aimed at strengthening teaching and management teams, improving schools' organisation, pedagogical leadership and support for teachers, especially in schools of greater educational complexity. See: BOE. "Resolution of 11 June 2026, of the Secretary of State for Education, publishing the Agreement of the Sectoral Conference on Education of 3 June 2026, approving the territorial distribution proposal and allocation criteria for credits managed by autonomous communities for the PROA+ Programme (European Social Fund+), in the 2026 budget year." https://www.boe.es/boe/dias/2026/06/20/pdfs/BOE-A-2026-13438.pdf.

digital infrastructure, connectivity, device provision and the development of school-level digital strategies. *For more*

information, see: Instituto Nacional de Tecnologías Educativas y de Formación del Profesorado. Plan Digital de Centro. Descripción y guía. Madrid: Ministerio de Educación y Formación Profesional. https://intef.es/wp-content/uploads/2020/07/2020_0707_Plan-Digital-de-Centro_-INTEF.pdf; and Red.es. "Educa en Digital. Iniciativa para apoyar la transformación y digitalización del sistema educativo." Gobierno de España, https://www.red.es/es/iniciativas/educa-en-digital.

53 For more information, see: Oficina Nacional de Prospectiva y Estrategia (coords). *HispanIA 2040. Cómo la IA mejorará nuestro futuro*. Madrid: Ministerio de la Presidencia, 2025. https://futuros.gob.es/sites/default/files/2025-01/HispanIA_2040.pdf.

54 Data available at: Ministerio de Educación, Formación Profesional y Deportes. *Enseñanzas no universitarias. Alumnado matriculado. Alumnado matriculado por enseñanza. Enseñanzas de Régimen General; and Alumnado extranjero por enseñanza*. https://www.educacionfpydeportes.gob.es/servicios-al-ciudadano/estadisticas/no-universitaria/alumnado/matriculado/series.html.

55 In 1991, 16% of young people had tertiary education, while by 2023 this figure had risen to 52%. By 2050, this trend is expected to continue, with more than 60% of young people having at least higher vocational education or university studies. For more information, see: Eurostat. *Population by educational attainment level, sex and age (%) - main indicators [edat_lfse_03]*. https://ec.europa.eu/eurostat/data/database; OECD. *Educational attainment and labour-force status*. https://stats.oecd.org/; and Oficina Nacional de Prospectiva y Estrategia (coord.). *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo*. Madrid: Ministerio de la Presidencia, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf.

56 The early school-leaving rate, defined as the percentage of the population aged 18 to 24 whose highest level of education is compulsory secondary education (ESO) or lower and who are not enrolled in formal education, stood at 54% in 1987. By 2018, it had fallen to 18% and, since 2021, has remained below 14%. If this trend continues, early school leaving is expected to fall below 3% by 2050. See: Eurostat. *Early leavers from education and training by sex and labour status [edat_lfse_14]; and Population by educational attainment level, sex and age (%) [edat_lfs_9903]*. https://ec.europa.eu/eurostat/data/database; and OECD. *Educational attainment and labour-force status*. https://stats.oecd.org/.

57 For more details, see: Eurostat. *Early leavers from education and training by sex and labour status [edat_lfse_14]; and Population by educational attainment level, sex and age (%) [edat_lfs_9903]* https://ec.europa.eu/eurostat/data/database; OECD. *Educational attainment and labour-force status*. https://stats.oecd.org/; and Oficina Nacional de Prospectiva y Estrategia (coord.). *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo*. Madrid: Ministerio de la Presidencia, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf.

58 The reduction in the labour force associated with population ageing itself will help to achieve this, as the working-age population could shrink by more than 10% by mid-century. The working-age population considered here comprises people aged 16 (the legal minimum working age) to 64. This trend is observed using both the INE and Eurostat baseline demographic scenarios. For more details, see: Eurostat. *Population on 1 January by age and sex [demo_pjan]*; and *Population on 1st January by age, sex and type of projection [proj_23np]*. https://ec.europa.eu/eurostat/data/database; e INE. *Resultados nacionales: serie 2024-2074. Población residente en España a 1 de enero, por sexo, edad y año*. https://www.ine.es/jaxiT3/Tabla.htm?t=36643&L=0. Between 1995 and 2024, the share of employed young people aged 30 to 34 rose from 61% to 78%. By 2050, the employment rate among young people is expected to reach 85%. For more details, see: Eurostat. *Employment rates by sex, age and citizenship (%) [lfsa_ergan]*. https://ec.europa.eu/eurostat/data/database; and Oficina Nacional de Prospectiva y Estrategia. "Brújula del país." Oficina Nacional de Prospectiva y Estrategia, https://futuros.gob.es/nuestro-trabajo/brujula-del-pais/desde-los-anos-80. The number of hours worked per week by employed people aged 16 to 64 shows a downward trend, falling from 42 hours in 1987 to 38 hours in 2023. For more details, see: Eurostat. *Average number of usual weekly hours of work in main job, by sex, professional status, full-time/part-time and occupation (hours) [lfsa_ewhuis]*. https://ec.europa.eu/eurostat/data/database.

59 The employment rate of women aged 30 to 34 in Spain rose from 49% to 74% between 1998 and 2024. The 2050 employment projection for this age group assumes that the female employment rate will converge, at a minimum, with the level recorded for men in 2024 (83%). This progress is explained mainly by the broad improvement in educational attainment among young people, with the gender gap among those attaining tertiary education now almost non-existent. It is also supported by the growing social and economic value placed on intermediate vocational education, where a very substantial gender gap in employment rates still existed in 2024 (84% for men; 70% for women). For more information, see: Eurostat. *Employment rates by sex, age and citizenship (%) [lfsq_ ergan], and Employment rates by sex, age and educational attainment level (%) [lfsa_ergaed]*. https://ec.europa.eu/eurostat/data/database; and Oficina Nacional de Prospectiva y Estrategia del Gobierno de España (coord.). *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo*. Madrid: Ministerio de la Presidencia, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf. According to statistics from the Instituto de la Mujer, women spent 56 hours on household and family care in 1993. According to data compiled by the Observatorio Social de la Fundación la Caixa, almost 20 years later women spent 14 fewer hours on these tasks. To estimate the average number of hours per week that women will devote to domestic work in 2050 (unpaid work in the home and family care), the rate of decline observed between 2019 and 2022 - equivalent to 1.7% per year - has been applied to the value reported for 2022. The change over this period has been used as the reference because these data are more precise than the information available for earlier periods. It is assumed that, by 2050, men will participate in these tasks to the same extent as women. For more details, see: Farré, Lidia, and Libertad González. "Desigualdades de género en el trabajo remunerado y el no remunerado tras la pandemia". Observatorio Social de la Fundación la Caixa, https://elobservatoriosocial.fundacionlacaixa.org/es/-/desigualdad-de-genero-en-trabajo-remunerado-y-no-remunerado-tras-la-pandemia; INE. *Encuesta de*

empleo del tiempo. Actividades principales (1 y 2 dígitos) y sexo. https://www.ine.es/dynt3/inebase/index.htm?type=pcaxis&path=/t25/e447/a2009-2010/p01/&file=pcaxis&L=0; e Instituto de la Mujer. *Usos del Tiempo, Estereotipos, Valores y Actitudes*. Madrid: Ministerio de Trabajo y Asuntos Sociales, 2007. https://www.inmujeres.gob.es/areasTematicas/estudios/serieEstudios/docs/usosdelTiempo.pdf#page=14.12.

60 According to the *Better Life Index* of the OECD, only 75% of mothers return to work eight years after the birth of their children. For more details, see: OECD *Better Life Index*. "Balance vida-trabajo." OECD https://www.oecdbetterlifeindex.org/es/topics/work-life-balance-es/. On the motherhood wage penalty in Spain, see: Molina, José Alberto, and Víctor M. Montuenga. "The motherhood wage penalty in Spain". *Journal of Family and Economic Issues* 30, 2009. https://doi.org/10.1007/s10834-009-9153-z. On work-family reconciliation and paternity leave, see: Jurado-Guerrero, Teresa, and Jacobo Muñoz-Comet. "Design Matters Most: Changing Social Gaps in the Use of Fathers' Leave in Spain". *Population Research and Policy Review* 40, 2021. https://doi.org/10.1007/s11113-020-09592-w; and Seiz, Marta, *et al*. "Non-normative couples in Spain: mothers career commitment, fathers work arrangements, and egalitarian ideologies." In Daniela Grunow and Marie Evertsson (eds.) *New Parents in Europe*. Cheltenham: Edward Elgar Publishing, 2019. https://doi.org/10.4337/9781788972970.00019.

61 A substantial share of wage differences originates in educational and occupational segregation from the earliest cohorts, while another part reflects the impact of motherhood and the adjustment of career paths after children are born, with part-time work being more prevalent among women. For more details, see: Arellano-Bover, Jaime, *et al*. "One Cohort at a Time: A New Perspective on the Declining Gender Pay Gap." *National Bureau of Economic Research Working Paper,* no. 32612, 2024. https://www.nber.org/papers/w32612; Hupkau, Claudia, and Jenifer Ruiz-Valenzuela. "Work and children in Spain: challenges and opportunities for equality between men and women." SERIEs, *Journal of the Spanish Economic Association* 13, 2022. https://doi.org/10.1007/s13209-021-00243-7; and Oficina Nacional de Prospectiva y Estrategia del Gobierno de España (coord.). *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo*. Madrid: Ministerio de la Presidencia, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf.

62 The use of artificial intelligence will make it possible to automate administrative processes, improve efficiency in industrial production, optimise inventory management, transform customer services and personalise education, to name just a few examples. For more details, see: Oficina Nacional de Prospectiva y Estrategia (coord.). *HispanIA 2040: cómo la IA mejorará nuestro futuro*. Madrid: Ministerio de la Presidencia, 2025. https://futuros.gob.es/sites/default/files/2025-01/HispanIA_2040.pdf. As emerging technologies such as artificial intelligence automate a growing number of tasks, it will be essential to focus on those that require critical thinking and human interaction. This will make social skills such as adaptability, communication and decision-making even more important. On this, see, among others: Acemoglu, Daron, *et al*. "Artificial intelligence and jobs: Evidence from online vacancies". *Journal of Labor Economics* 40, 2022. https://www.journals.uchicago.edu/doi/abs/10.1086/718327; and Loaiza, Isabella, and Roberto Rigobon. "The EPOCH of AI: Human Machine Complementarities at Work". *MIT Working Paper,* 2024. http://dx.doi.org/10.2139/ssrn.5028371.

63 The platformisation of work—characterised by algorithmic mediation, digital surveillance and contractual fragmentation—has expanded significantly in Europe over the past decade, affecting different groups of workers unevenly. Recent literature documents its implications for working conditions, algorithmic management and access to social protection, with increasing attention to feminised and informal sectors where these effects are intensified by gender inequalities and migrant background. For more information, see: Adăscăliței, Dragoș. "Algorithmic control: How digital surveillance is shaping online platform work in Europe". Eurofound, 2026. https://www.eurofound.europa.eu/en/publications/all/algorithmic-control-how-digital-surveillance-is-shaping-online-platform-work-in-europe, Fernández Macías, Enrique, *et al*. "The platformisation of work". Publications Office of the European Union, 2023. https://doi.org/10.2760/801282; and Rodríguez-Modroño, Paula. "A taxonomy of business models of digital care platforms in Spain". Sociology Compass 18, no. 7, 2024. https://doi.org/10.1111/soc4.13243.

64 In Japan, a well-known retail chain is already experimenting with avatars remotely controlled by workers from their homes. The trial, launched in response to COVID-19, aims to protect workers and provide employment for people who cannot be physically present at the workplace. See: Inagaki, Kana, Leo Lewis, and David Keohane. "Avatars, robots and AI: Japan turns to innovation to tackle labour crisis". Financial Times, https://www.ft.com/content/ad850ad2-6752-4ca7-99f6-4b947d0b741e.

65 In 1995, workers aged 55 to 69 accounted for 11% of all employed people, while by 2023 this figure had risen to 20%. For more details, see: Eurostat. *Employment by sex, age and citizenship (1 000) [lfsa_egan]*. https://ec.europa.eu/eurostat/web/main/data/database. For more information on the foreign workforce in key sectors, see: Oficina Nacional de Prospectiva y Estrategia del Gobierno de España (coord.). *España ante el reto migratorio: análisis de dos futuros posibles*. Madrid: Ministerio de la Presidencia, 2026. https://futuros.gob.es/nuestro-trabajo/reto-migratorio.

66 The average age of the employed population in Spain increased from 38.8 years in 2002 to 44.2 in 2024. The relative shares of employees and self-employed workers in the total employed population are taken into account. For more information, see: INE. *Encuesta de población activa. Ocupados y asalariados por sexo y grupo de edad. Valores absolutos y porcentajes respecto del total de cada sexo*. https://www.ine.es/dynt3/inebase/index.htm?padre=10904&capsel=10904. Between December 2023 and December 2025, the number of people authorised to reside in Spain as international remote workers rose from 9,263 to 53,403. This status is intended for third-country nationals who carry out remote employment or professional activity from Spain for companies based outside the country. Although their overall share remains small, the number has risen markedly since the status was introduced under the Ley de startups, pointing to sustained expansion in the coming years. For more information, see: Boletín Oficial del Estado. *Ley 28/2022, de 21 de diciembre, de fomento del ecosistema de las empresas emergentes*. https://www.boe.es/buscar/act.php?id=BOE-A-2022-21739; and Observatorio Permanente de la Inmigración. Evolución trimestral del número de personas según figura

legal. https://www.inclusion.gob.es/web/opi/estadisticas/productos_servicios/infografias/stock_ley14.

67 For more details, see: Anghel, Brindusa, and Aitor Lacuesta. "Envejecimiento y evolución del capital humano a lo largo de la vida laboral." In Ismael Sanz (ed.). *El capital humano en la economía digital*. Madrid: Funcas, *Papeles de Economía Española*, n.º 166, 2020. 144-166. https://www.funcas.es/articulos/envejecimiento-y-evolucion-del-capital-humano-a-lo-largo-de-la-vida-laboral/; and Oficina Nacional de Prospectiva y Estrategia (coord.). *España 2050: Fundamentos y propuestas para una Estrategia Nacional de Largo Plazo*. Madrid: Ministerio de la Presidencia, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/200521-Estrategia_Espana_2050.pdf.

68 In 2019, before the COVID-19 pandemic, fewer than 8% of employed people in Spain worked remotely on a regular or occasional basis. By 2024, almost 15% of workers did so, and this trend is expected to continue rising in the future. The number of *coworking* spaces increased from fewer than 200 in 2012 to 2,400 in 2023. For more details, see: CoworkingSpain. *El estado del coworking en España 2022-2023*. https://coworkingspain.es/documentos/estado-del-coworking-en-espana-2022-23; INE. *El teletrabajo en España y la UE antes del COVID-19*. Boletín Informativo del Instituto Nacional de Estadística. Madrid: Boletín Informativo, 2019. https://www.ine.es/ss/Satellite?L=es_ES&c=INECifrasINE_C&cid=1259952649680&p=1254735116567&pagename=ProductosYServicios%2FINECifrasINE_C%2FPYSDetalleCifrasINE; and Observatorio Nacional de Tecnología y Sociedad. *Teletrabajo 2024. Edición 2024*. Madrid: Ministerio para la Transición Digital y de la Función Pública, 2024. http://doi.org/10.30923/23024013X.

69 On the unequal distribution of remote work and job flexibility by occupation, territory and employment characteristics, see: Eurofound. *Living and working in Europe 2024*. Luxemburgo: Publications Office of the European Union, 2025. https://eurofound.link/ef25033; and Verd, Joan M., *et al*. "Escaping the trap of temporary employment: Precariousness among young people before and after Spain's 2021 labour market reform act". *International Journal of Social Welfare, 2024*. https://doi.org/10.1111/ijsw.12645.

70 Technostress refers to the tension, anxiety or discomfort that some people experience when interacting with digital technologies such as computers, smartphones or social media. For more information on how remote work can affect people's mental health and well-being, see: Nguyen, Minh Hao, and Eszter Hargittai. "Digital disconnection, digital inequality, and subjective well-being: a mobile experience sampling study". *Journal of Computer-Mediated Communication* 29, no. 1, 2024. https://doi.org/10.1093/jcmc/zmad044; and Oakman, Jodi, *et al*. "A rapid review of mental and physical health effects of working at home: how do we optimise health?". *BMC Public Health* 20, no. 1825, 2020. https://doi.org/10.1186/s12889-020-09875-z. For more details on the effect of remote work on work-life balance, see: Rodríguez-Modroño, Paula, and Purificación López-Igual. "Job quality and work—life balance of teleworkers". *International Journal of Environmental Research and Public Health* 18, no. 6, 2021. https://doi.org/10.3390/ijerph18063239.

71 Real Decreto-ley 4/2023, de 11 de mayo, introduced measures to protect people who work outdoors during episodes of extreme heat, including adjusting working hours where necessary. For more information, see: Boletín Oficial del Estado. *Real Decreto-ley 4/2023, de 11 de mayo, por el que se adoptan medidas urgentes en materia agraria y de aguas en respuesta a la sequía y al agravamiento de las condiciones del sector primario derivado del conflicto bélico en Ucrania y de las condiciones climatológicas, así como de promoción del uso del transporte público colectivo terrestre por parte de los jóvenes y prevención de riesgos laborales en episodios de elevadas temperaturas*. Madrid, 2023. https://www.boe.es/buscar/act.php?id=BOE-A-2023-11187; and Instituto Nacional de Seguridad y Salud en el Trabajo. *Espacio del INSST sobre el trabajo a la intemperie*. Madrid: INSST. https://www.insst.es/documentacion/espacio-monotematico/golpe-de-calor.

72 These preferences are already visible today: in 2022, around two thirds of people under 45 considered leisure more important than work, compared with just over half of those aged 45 to 64. For more details, see: Papel. "Encuesta Sigma Dos. Uno de cada dos jóvenes españoles preferiría estar en el paro antes que ser infeliz en su trabajo." El Mundo, https://www.elmundo.es/papel/historias/2022/11/13/636e9ac7e4d4d80a128b4590.html.

73 For more information, see: Milli, Smitha, *et al*. "Engagement, user satisfaction, and the amplification of divisive content on social media". *PNAS Nexus,* 2025. https://doi.org/10.1093/pnasnexus/pgaf062; OECD. *Artificial Intelligence in Society*. Paris: OECD Publishing, 2019. https://doi.org/10.1787/eedfee77-en; and Schuster, Nick, and Seth Lazar. "Attention, moral skill, and algorithmic recommendation". *Philosophical Studies,* 2024. https://doi.org/10.1007/s11098-023-02083-6.

74 In 1989, the three most common leisure activities among young Spaniards were going out with friends (77%), doing sport (48%) and going to bars, cafés or pubs (48%). By 2016, although going out with friends remained the most common activity (94%), alternative forms of leisure such as listening to music (92%), watching television (91%) or going to the cinema (88%) had gained relative importance. By 2018, 36% of Spaniards were already spending their free time browsing the internet or using social media, overtaking more traditional options such as going to bars or nightclubs (26%). For more details, see: Centro de Investigaciones Sociológicas. *Barómetro de junio 2018*. Madrid: Study no. 3217, 2018. https://www.cis.es/documents/d/cis/es3217marpdf; and González-Anleo, Juan María, and José A. López Ruiz. *Jóvenes españoles entre dos siglos: 1984-2017*. Madrid: Observatorio de la Juventud en Iberoamérica, 2018. https://oji.fundacion-sm.org/nuestros-estudios/jovenes-espanoles-entre-dos-siglos-1984-2017/. Brain-computer applications, which until now have focused mainly on healthcare or assistance for people with reduced mobility, are also beginning to show potential in entertainment. In video games, one of the most promising lines of research proposes that the user's own brain activity could directly influence the dynamics of the game. For example, a video game could increase its difficulty if it detects that the player is bored, or become gentler if it detects signs of stress. For more information, see: de Queroiz Cavalcanti, Daniel, *et al*. "Research on Brain-Computer Interfaces in the Entertainment Field." In Masaaki Kurosu and Ayako Hashizume (eds.). *Human-Computer Interaction International Conference 2023. Lecture Notes in Computer Science*. Cham: Springer, 2023.

75 In 2023, children under 13 in Spain spent 15% of their leisure time playing outdoors and 23% on screen-based activities. The

share of children aged 10 to 15 with a mobile phone rose from 58% in 2006 to 70% in 2024. Also in 2024, 97% of children aged 10 to 17 used phones or *tablets*, mainly to access social media (80%), listen to music (78%) and watch series or films (52%). For more information, see: INE. *Encuesta sobre equipamiento y uso de tecnologías de información y comunicación en los hogares 2022. Evolución de datos de niños de 10 a 15 años (2006-2024) por sexo, hábitat, tamaño del hogar, principales variables y periodo. Niños que disponen de teléfono móvil*. https://www.ine.es/dynt3/inebase/index.htm?padre=1834&capsel=11811; Instituto Tecnológico de Producto Infantil y Ocio. *Guía Aiju. Única guía basada en estudios con niños/ as y familias*. Alicante: AIJU, 2023. https://www.aiju.es/wp-content/uploads/2023/11/guia-aiju-2023-2024.pdf; and Save the Children. *Derechos #sinconexión. Un análisis sobre derechos de la infancia y la adolescencia y su protección en el entorno digital*. Madrid: Save the Children España, 2024. https://www.savethechildren.es/sites/default/files/2024-07/Informe_Derechos_SinConexion.pdf. In 2023, 73% of Spanish young people aged 15 to 19 played video games and, of these, 60% did so every day. That same year, 61% of players played *online* at least once a week, compared with 37% who played with friends in person. In 2002, 58% of young people aged 14 to 18 played video games; only 20% did so daily, and just 6% played regularly over the internet. For more information, see: Rodríguez, Elena (coord.). *Jóvenes y videojuegos: Espacio, significación y conflictos*. Madrid: Edición Injuve-FAD, 2002. https://www.injuve.es/observatorio/ocio-y-tiempo-libre/jovenes-y-videojuegos-espacio-significacion-y-conflictos-fad; and Gómez-Miguel, Alejandro, and Daniel Calderón-Gómez. *Videojuegos y jóvenes: lugares, experiencias y tensiones*. Madrid: Centro Reina Sofía de Fad Juventud, 2023. http://dx.doi.org/10.5281/zenodo.7970990.

76 Between 2010 and 2023, the share of Spaniards aged 20 to 34 who did not socialise with family or friends at least once a week rose from 11% to 22%. Among people aged 35 to 80, the increase was smaller: from 26% to 29%. For more details, see: Encuesta Social Europea. *Rounds 5 (2010) y 11 (2023) [sclmeet]*. https://www.europeansocialsurvey.org/data-portal.

77 In 2023, 70% of Spaniards used television to get news; 55% used the press (whether digital or print); 44% radio; 44% social media; and 12% podcasts. In 2024, young people aged 16 to 30 obtained news mainly through social media (49%), followed by television (44%) and the press or news platforms (20%). For more details, see: Centro de Investigaciones Sociológicas. *Estudio sobre audiencias de medios de comunicación*. Madrid: Study no. 3421, 2023. https://www.cis.es/documents/d/guest/es3421mar-pdf; Eurobarómetro. *Youth Survey 2024*. https://europa.eu/eurobarometer/surveys/detail/3392; and Save the Children España. *Desinformación y discursos de odio en el entorno digital*. Madrid: Save the Children España, 2024. https://www.savethechildren.es/sites/default/files/2024-09/Desinformacion_y_discursos_de_odio_en_el_entorno_digital.pdf. On the evolution of news and information consumption, see: Asociación para la Investigación de Medios de Comunicación. *Marco General de los Medios en España 2025*. Madrid: Asociación para la Investigación de Medios de Comunicación, 2025. https://www.aimc.es/a1mc-c0nt3nt/uploads/2025/02/Marco_General_Medios_2025.pdf.

78 In Spain, television began to become widespread in households in the late 1950s and, by the end of the 1960s, 62% of households already had a television set, a figure that rose to 97% in 1987. By 2024, Spanish households had an average of two television sets. That same year, 80% of people over 65 still watched linear television every day, compared with 30% of 18- to 24-year-olds. For more information, see: Asociación para la Investigación de Medios de Comunicación. At the same time, that year people over 65 watched an average of 409 minutes of television per day, more than twice as much as young people aged 13 to 24 (167 minutes). *¿Alguien sabe cómo, dónde y cuándo vemos televisión?* A Coruña: AEDEMO, 2025. https://www.aimc.es/a1mc-c0nt3nt/uploads/2025/04/2025_03_27_AEDEMOTV_Ponencia_AEDEMO-2025_Alguien_sabe_como_donde_y_cuando_vemos_television.pdf; Barlovento Comunicación. *Análisis de la industria televisiva-audiovisual 2024*. 2025. https://barlovento-comunicacion.es/wp-content/uploads/2025/01/INFORME-ANUAL-2024-BARLOVENTO-COMUNCACION.pdf; Centro de Investigaciones Sociológicas. *Distribución de los tiempos y audiencia de los medios de comunicación. Cuestionarios A y B*. Madrid: Study no. 1709, 1987. https://www.cis.es/documents/d/cis/es1709mar_Total-pdf; Comisión Nacional de los Mercados y la Competencia. *Panel de hogares. Cantidad de equipamientos tecnológicos disponibles en el hogar*. https://data.cnmc.es/panel-de-hogares/conjuntos-de-datos/estadisticas-panel-de-hogares; 40dB. *Radiografía de la lectura en el siglo XXI*. https://elpais.com/babelia/2024-11-23/consulte-todos-los-datos-internos-de-la-encuesta-sobre-el-lector-espanol-del-siglo-xxi-cuestionarios-cruces-y-respuestas-individuales.html; and Rueda-Lafond, José Carlos. "La televisión en España: expansión y consumo social, 1963-1969". *Anàlisi: Quaderns de comunicació* 32, 2005. https://ddd.uab.cat/record/5411. In 1987, 29.5% of Spaniards went to the cinema regularly, compared with 14% who reported going at least once a month in 2024. The share of people with access to streaming platforms at home increased from 23% in 2018 to 68% in 2024. For more details on changing preferences around cinema as a leisure activity, as well as the expansion of streaming platforms, see: Asociación para la Investigación de Medios de Comunicación. *2024-3ª Ola. Cine: Hábitos de Asistencia*. https://reporting.aimc.es/index.html#/main/cine; and Marco General de los Medios en España 2025. Madrid: Asociación para la Investigación de Medios de Comunicación, 2025. https://www.aimc.es/a1mc-c0nt3nt/uploads/2025/02/Marco_General_Medios_2025.pdf; and Centro de Investigaciones Sociológicas. *Evolución del sistema de valores (III) y proceso de secularización de la sociedad española (Nacional)*. Madrid: Study no. 1698, 1987. https://www.cis.es/es/estudios/evolucion-del-sistema-de-valores-iii-y-proceso-de-secularizacion-de-la-sociedad-espanola.

79 On the growing role of personalisation platforms and artificial intelligence in shaping media habits, as well as the challenges associated with the proliferation of synthetic content and disinformation, see: European Board for Digital Services. *First report of the European Board for Digital Services in cooperation with the Commission pursuant to Article 35(2) DSA on the most prominent and recurrent systemic risks as well as mitigation measures*. European Board for Digital Services, 2025. https://home-affairs.ec.europa.eu/networks/eu-knowledge-hub-prevention-radicalisation/welcome-package/learning-resources/first-report-european-board-digital-services-cooperation-commission-pursuant-article-352-dsa-most_en; UNESCO. *Guía para el uso de IA generativa en educación e investigación*. Paris: UNESCO, 2024.

https://unesdoc.unesco.org/ark:/48223/pf0000389227; and World Economic Forum. *The Global Risks Report 2026*. Geneva: 21st Edition, 2026. https://www.weforum.org/publications/global-risks-report-2026/. For more information on the implications for social cohesion, see: Digipatch. "Moving from networked to patchworked society." Digipatch, https://digipatch.eu/; Kossowska, M., *et al*. "Internet-based micro-identities as a driver of societal disintegration." *Humanit Soc Sci Commun* 10, 2023. https://doi.org/10.1057/s41599-023-02441-z; and Lobato, R. M., *et al*. "Impact of psychological and structural factors on radicalization processes: A multilevel analysis from the 3N model." *Psychology of Violence* 13, no. 6, 2023. https://psycnet.apa.org/doi/10.1037/vio0000484.

80 For more information, see: Boletín Oficial del Estado. *Reglamento (UE) 2022/2065 del Parlamento Europeo y del Consejo de 19 de octubre de 2022 relativo a un mercado único de servicios digitales y por el que se modifica la Directiva 2000/31/CE (Reglamento de Servicios Digitales)*. https://www.boe.es/buscar/doc.php?id=DOUE-L-2022-81573; and Gobierno de España. *Carta de Derechos Digitales*. Madrid, 2021. https://www.lamoncloa.gob.es/presidente/actividades/Documents/2021/140721-Carta_Derechos_Digitales_RedEs.pdf.

81 On time as a scarce and managed resource, see: Durán Heras, María Ángeles. *Tiempo de vida y tiempo de trabajo*. Bilbao: Fundación BBVA, 2010; and Kooji, Dorien T. A. M., *et al*. "Future time perspective: A systematic review and meta-analysis". *Journal of Applied Psychology*, 2018. https://doi.org/10.1037/apl0000306. On the valorisation of performance, constant optimisation and self-exploitation, see: Han, Byung-Chul. *La sociedad del cansancio*. Barcelona: Herder Editorial, 2024.

82 For more information on how the growing collection of personal data is transforming people's relationship with their own bodies and encouraging forms of continuous self-assessment, in a context in which measuring, interpreting and optimising everyday activity is becoming increasingly common, see: Kristensen, Dorthe Brogård, and Minna Ruckenstein. "Co-evolving with self-tracking technologies." *New Media & Society*, 2018. https://doi.org/10.1177/1461444818755650; Lupton, Deborah. "The diverse domains of quantified selves: self-tracking modes and dataveillance." *Economy and Society*, 2016. https://doi.org/10.1080/03085147.2016.1143726; Neff, Gina, and Dawn Nafus. *Self-tracking*. The MIT Press, 2016; and Pols, Jeannette, Dick Willems, and Margunn Aanestad. "Making sense with numbers. Unravelling ethico-psychological subjects in practices of self-quantification". *Sociology of Health & Illness*, 2019. https://doi.org/10.1111/1467-9566.12894.

83 The percentage of workers in Spain who report having experienced *burnout* increased from 39% in 2021 to 70% in 2023. For more information, see: The Adecco Group. *Resetting Normal II: redefiniendo la nueva era del trabajo*. Madrid: The Adecco Group, 2021. https://www.adeccoinstitute.es/wp-content/uploads/2021/12/NdP-Resetting-Normal.-4-de-cada-10-espanoles-han-sufrido-burnout-durante-el-ultimo-ano-y-piden-a-las-empresas-que-apliquen-medidas-para-garantizar-la-sa.pdf; and *What's Working? Navigating the AI Revolution and the Shifting Future of Work. Global Workforce of the Future*. Zúrich: The Adecco Group, 2023. https://www.adeccogroup.de/wp-content/uploads/2023/10/Studie-Global-Workforce-of-the-Future-2023.pdf. In 2024, 73% of the Spanish population reported sleeping less than they would like on working days, and 80% of those with sleep problems attributed them to stress. In addition, 18% of people whose sleep was not restorative used anxiolytics or antidepressants to help them sleep. For more details, see: El País y SER. *Radiografía del sueño*. Madrid: El País y SER, 2024. https://ep00.epimg.net/infografias/encuestas40db/2024/02-sueno/2024_02_sueno_informe.pdf. On the trend among adolescents aged 11 to 18 who sleep no more than six hours on weekdays, see: Moreno Rodríguez, María del Carmen (coord.). *Informe comparativo de las ediciones 2002-2006-2010-2014-2018-2022 del estudio HBSC en España*. Madrid: Ministerio de Sanidad, 2025. https://www.sanidad.gob.es/areas/promocionPrevencion/entornosSaludables/escuela/estudioHBSC/2022/divulgativo.htm. Poor sleep or non-restorative sleep not only affects day-to-day well-being, but also increases the risk of developing cardiovascular disease and mental disorders such as Alzheimer's disease, as well as the risk of mortality. For more information, see: Amin, Krunal D., *et al*. "A good night's rest: A contemporary review of sleep and cardiovascular health". *American Journal of Preventive Cardiology* 21, 2025. https://doi.org/10.1016/j.ajpc.2024.100924; Blackman, Jonathan, *et al*. "Cross-sectional and longitudinal association of sleep and Alzheimer in cognitively unimpaired adults". *Brain Communications* 4, no. 6, 2022. https://doi.org/10.1093/braincomms/fcac257; and Del Bruto, Oscar H., *et al*. "Poor sleep quality increases mortality risk: A population-based longitudinal prospective study in community-dwelling middle-aged and older adults". *Sleep Health* 10, no. 1, 2024. https://doi.org/10.1016/j.sleh.2023.10.009. In Germany, 41% of young adults recently reported having used a digital well-being app in the past in an effort to disconnect, while in Switzerland around three in four adults say they frequently take periods of digital disconnection. In Spain, in 2022, almost 70% of the population acknowledged their dependence on technology, 46% felt they should reduce their use, and as many as 10% had sought or considered seeking therapy to reduce the time spent on their devices. For more information, see: Kaspersky. *Influencia de la tecnología en la vida de los españoles*. Madrid: Kaspersky, 2023. https://media.kasperskydaily.com/wp-content/uploads/sites/88/2023/04/11112639/kaspersky_InformeInfluenciaTecnologiaVidaEspanoles.pdf; Nassen, Lise-Marie, *et al*. "Opt-out, abstain, unplug. A systematic review of the voluntary digital disconnection literature". *Telematics and Informatics* 81, 2023. https://doi.org/10.1016/j.tele.2023.101980; Nguyen, Minh Hao, Moritz Büchi, *and* Sarah Geber. "Everyday disconnection experiences: Exploring people's understanding of digital well-being and management of digital media use". *New Media & Society* 26, no. 6, 2024. https://doi.org/10.1177/14614448221105428.

84 For more information on how processes of social differentiation are articulated through the adoption and reinterpretation of cultural practices, see: Bourdieu, Pierre. *La distinción. Criterio y bases sociales del gusto*. Madrid: Editorial Taurus, 2012; and Simmel, George. *On individuality and social forms*. London: The University of Chicago Press, 1971; and *Sobre la diferenciación social. Investigaciones sociológicas y psicológicas*. Barcelona: Editorial Gedisa, 2017. On the effects of public space on interaction and social life, see: Chen, Shuolei, *et al*. "Exploring associations between social interaction and urban park attributes: Design guideline for both overall and separate park quality enhancement". *Cities*, 2024. https://doi.org/10.1016/j.cities.2023.104714; and Loo, Becky PY, and Zhuangyuan Fan. "Social interaction in public space: Spatial edges, moveable furniture, and visual landmarks". *Environment and Planning B:*

Urban Analytics and City Science, 2023. https://doi.org/10.1177/23998083231160549.

85 For more information, see: Amati, Viviana, *et al*. "Social relations and life satisfaction: the role of friends". *Genus*, 2018. https://doi.org/10.1186/s41118-018-0032-z; Brehm, John M., and Wendy Rahn. "Individual-Level Evidence for the Causes and Consequences of Social Capital". *American Journal of Political Science*, 1997. https://doi.org/10.2307/2111684; Huxhold, Oliver, Katherine L. Fiori, and Tim Windsor. "Rethinking Social Relationships in Adulthood: The Differential Investment of Resources Model." *Personality and Social Psychology Review*, 2022. https://doi.org/10.1177/10888683211067035; and Levasseur, Mélanie, *et al*. "Importance of proximity to resources, social support, transportation and neighborhood security for mobility and social participation in older adults: results from a scoping study". *BMC Public Health*, 2015. https://doi.org/10.1186/s12889-015-1824-0.

86 More details in: Schnepf, Sylke V., Béatrice dé Hombres, and Caterina Mauri (eds.). *Loneliness in Europe. Determinants, Risks and Interventions*. Population Economics, 2024. https://doi.org/10.1007/978-3-031-66582-0; and World Health Organization. *From loneliness to social connection*. Geneva: World Health Organization, 2025. https://iris.who.int/bitstream/handle/10665/381746/9789240112360-eng.pdf?sequence=1.

87 In 2017, 73% of Spaniards considered their friends very important, rating them eight or higher on a scale of 10. As for companion animals, a study conducted in Andalusia in 2021 found that 62% of respondents believed pets should be considered another member of the family. For more details, see: Ayuso Sánchez, Luis, Nadia Khamis, Gutiérrez y Olga Jiménez Rodríguez. *La realidad familiar en Andalucía. Opiniones, actitudes y comportamientos*. Sevilla: Centro de Estudios Andaluces, 2021. https://www.centrodeestudiosandaluces.es/publicaciones/la-realidad-familiar-en-andalucia-opiniones-actitudes-y-comportamientos; and Centro de Investigaciones Sociológicas. *Barómetro de octubre 2017*. Madrid: Study no. 3191, 2017. https://www.cis.es/documents/d/cis/es3191marpdf.

88 Based on Alburez-Gutierrez, Williams and Caswell, the total number of relatives that a person born in 2018 will have at age 30 has been estimated and compared with that of earlier generations at the same age. The estimates suggest that they will have between 15 and 16 relatives in 2045-2050, compared with 19 for those who reached that age in 2015-2020 and 23 for those who did so in 1990-1995. For more details, see: Alburez-Gutierrez, Diego, Iván Williams, and Hal Caswell. "Projections of human kinship for all countries". *Proceedings of the National Academy of Sciences* 120, no. 52, 2023. https://doi.org/10.1073/pnas.2315722120.

89 For more information on the growing diversification of relationship trajectories and the persistence of the couple as a source of stability in contexts of greater emotional uncertainty, see: Giddens, Anthony. *The Transformation of Intimacy Sexuality, Love, and Eroticism in Modern Societies*. Redwood City, California: Stanford University Press, 1993; e Illouz, Eva. *Why Love Hurts: A Sociological Explanation*. Cambridge: Polity Press, 2012.

90 Relatives are classified as vertical (great-grandparents, grandparents, parents, children, grandchildren and great-grandchildren) and horizontal (aunts and uncles, cousins, siblings, nieces and nephews). For more information, see: Alburez-Gutierrez, Diego, Iván Williams, and Hal Caswell. "Projections of human kinship for all countries". *Proceedings of the National Academy of Sciences* 120, no. 52, 2023. https://doi.org/10.1073/pnas.2315722120.

91 In 2023, 9% of young Spaniards aged 25 to 34 reported using the internet to find dates and 13% to meet new people. In addition, in 2022, 18.6% of Spaniards said they had met their partner online. For more details, see: Centro de Investigaciones Sociológicas. *Encuesta sobre Relaciones Sociales y Afectivas Pospandemia (III)*. Madrid: Study no. 3400, 2023. https://www.cis.es/documents/d/cis/es3400mar-pdf; and Kaspersky. *Influencia de la tecnología en la vida de los españoles*. Madrid: Kaspersky, 2023. https://media.kaspersky.com/wp-content/uploads/sites/88/2023/04/11112639/kaspersky_InformeInfluenciaTecnologiaVidaEspanoles.pdf.

92 Household internet penetration reached 38% in 2006 and exceeded 50% in 2009. In 2023, 96% of homes had internet access. For more details, see: INE. *Encuesta sobre equipamiento y uso de tecnologías de información y comunicación en los hogares. Evolución de datos de viviendas (2006-2023) por tamaño del hogar, hábitat, tipo de equipamiento y periodo*. https://www.ine.es/dynt3/inebase/index.htm?padre=1834&capsel=10111. Internet-enabled mobile connections exceeded 50% of all mobile lines in 2013. For more details, see: Comisión del Mercado de las Telecomunicaciones. *Informe Económico Sectorial* 2014. Barcelona: Comisión del Mercado de las Telecomunicaciones, 2014. https://www.cnmc.es/sites/default/files/1539380_7.pdf. In 2016, the main use of the internet was social networking: 24% of the population used it to communicate with people they could not see often, 22% to follow other people's lives, 20% to share their own moments and 16% to keep up with conversations and events. In the late 1990s, by contrast, 39% of Spaniards who used the internet did so for entertainment, 18% for information and only 7% for communication. For more details, see: Centro de Investigaciones Sociológicas. *Barómetro de febrero 2016*. Madrid: Study no. 3128, 2016. https://www.cis.es/documents/d/cis/es3128marpdf; and *Encuesta de tiempo libre e informática*. Madrid: Study no. 2269, 1997. https://www.cis.es/detalle-ficha-estudio?origen=estudio&idEstudio=1258.

93 On the use of instant messaging and video calls, see: Comisión Nacional de los Mercados y la Competencia. *Panel de hogares. Usos de Internet y servicios OTT. Frecuencia de uso de las llamadas y mensajes mediante servicios de comunicación tradicionales y OTT (porcentaje de individuos)*. https://data.cnmc.es/panel-de-hogares/conjuntos-de-datos/estadisticas-panel-de-hogares. Mobile networks account for an increasing share of total voice traffic in Spain. In 2023, 80% of call minutes were mobile-to-mobile; 11% mobile-to-landline; 7% landline-to-mobile; and 2% landline-to-landline. For more information, see: Comisión Nacional de los Mercados y la Competencia. *Telecomunicaciones y Audiovisual. Informe Económico-Sectorial 2023*. Madrid: Comisión Nacional de los Mercados y la Competencia, 2024. https://www.cnmc.es/sites/default/files/5410607.pdf.

94 Comisión Nacional de los Mercados y la Competencia. *Panel de hogares. Usos de Internet y servicios OTT. Frecuencia de uso de las llamadas y mensajes mediante servicios de comunicación tradicionales y OTT (porcentaje de individuos)*. https://data.cnmc.es/panel-de-hogares/conjuntos-de-datos/estadisticas-panel-de-hogares.

95 For more information, see: Guzman, Andrea L, and Seth C. Lewis. “Artificial intelligence and communication: A Human–Machine Communication research agenda.” *New Media & Society* no. 1, 2019. https://doi.org/10.1177/1461444819858691; Forbes Technology Council. “9 tech experts share their predictions for what’s next for smartphones.” Forbes, https://www.forbes.com/sites/forbestechcouncil/2023/02/06/9-tech-experts-share-their-predictions-for-whats-next-for-smartphones/; and Hancock, Jeffrey T., Mor Naaman, and Karen Levy. “AI-Mediated Communication: Definition, Research Agenda, and Ethical Considerations.” *Journal of Computer-Mediated Communication* no. 1, 2020. https://doi.org/10.1093/jcmc/zmz022.

96 This includes people who meet family or friends at least several times a week. For more details, see: Encuesta Social Europea. *Round 11* (2023). [*sclmeet*]. https://www.europeansocialsurvey.org/data-portal.

97 Although there is a trend towards less socialising, in 2023, 53% of Spaniards reported meeting friends, family and/or co-workers at least several times a week, above the European average of 43%. For more details, see: Encuesta Social Europea. *Round 11 (2023). [sclmeet].* https://ess.sikt.no/en/; and Megías, Ignacio. *Jóvenes y Amistad*. Madrid: Fundación SM y Centro Reina Sofía de Fad Juventud, 2024. https://www.centroreinasofia.org/publicacion/jovenes-y-amistad/.

98 In 2022, 35% of Spaniards with a car or motorcycle reported having stopped using or reduced the use of their vehicle for environmental reasons in their everyday travel. For more information, see: Fundación BBVA. *Valores, actitudes y conducta medioambiental de los españoles*. Madrid: Departamento de Estudios Sociales y Opinión Pública, 2022. https://www.biophilia-fbbva.es/wp-content/uploads/sites/3/2022/06/estudio-cultura-medioambiental.pdf.

99 For more details, see: Boletín Oficial del Estado. Ley *9/2025, de 3 de diciembre, de Movilidad Sostenible*. https://www.boe.es/buscar/act.php?id=BOE-A-2025-24545; and Ministerio de Transportes y Movilidad Sostenible. *Estrategia de movilidad segura, sostenible y conectada* 2030. Madrid, 2021. https://cdn.mitma.gob.es/portal-web-drupal/esmovilidad/ejes/211223_es.movilidad_accesibilidad_ALTA_vf.pdf.

100 In 2016, 36.7% of the Spanish population said they would use public transport more if services ran more frequently. For more information, see: García Montes, Jesús Pedro, *et al. Estudio sobre Hábitos y Actitudes de los no Usuarios Habituales hacia el Transporte Público Urbano Colectivo*. Madrid: IDAE, 2016. https://www.idae.es/sites/default/files/documentos/publicaciones_idae/2017-09-10_estudio_no_usuario.pdf. On technological advances in transport and their implementation processes, see: Joaquín Acosta, Aída. “Nuevas tendencias de las tecnologías en movilidad urbana.” In Julio Gómez-Pomar (coord.). *Hacia una nueva movilidad en las ciudades*. Madrid: Colegio de Economistas de Madrid, 2020. https://multimedia2.coev.com/pdfs/economistas169.pdf#page=52; and Narayanan, Santhanakrishnan, and Antoniou Constantinos. “Shared mobility services towards Mobility as a Service (MaaS): What, who and when?” *Transportation Research Part A: Policy and Practice* 168, 2023. https://doi.org/10.1016/j.tra.2023.103581. The “platooning bus” has been developed by the *Karlsruhe Institute of Technology*, with the aim of deploying it in the city of Munich. For more details, see: *Karlsruhe Institute of Technology*. “Platooning – the Future of Munich City Buses.” *Karlsruhe Institute of Technology*, https://www.kit.edu/kit/english/pi_2021_050_platooning-the-future-of-munich-city-buses.php.

101 In 2016, 36.7% of the Spanish population said they would use public transport more if services ran more frequently. For more information, see: García Montes, Jesús Pedro, *et al. Estudio sobre Hábitos y Actitudes de los no Usuarios Habituales hacia el Transporte Público Urbano Colectivo*. Madrid: IDAE, 2016. https://www.idae.es/sites/default/files/documentos/publicaciones_idae/2017-09-10_estudio_no_usuario.pdf. On technological advances in transport and their implementation processes, see: Joaquín Acosta, Aída. “Nuevas tendencias de las tecnologías en movilidad urbana.” In Julio Gómez-Pomar (coord.). Hacia una nueva movilidad en las ciudades. Madrid: Colegio de Economistas de Madrid, 2020. https://multimedia2.coev.com/pdfs/economistas169.pdf#page=52; and Narayanan, Santhanakrishnan, and Antoniou Constantinos. “Shared mobility services towards Mobility as a Service (MaaS): What, who and when?” *Transportation Research Part A: Policy and Practice* 168, 2023. https://doi.org/10.1016/j.tra.2023.103581. The “platooning bus” has been developed by the *Karlsruhe Institute of Technology*, with the aim of deploying it in the city of Munich. For more details, see: *Karlsruhe Institute of Technology*. “Platooning – the Future of Munich City Buses.” *Karlsruhe Institute of Technology*, https://www.kit.edu/kit/english/pi_2021_050_platooning-the-future-of-munich-city-buses.php.

102 On the implementation of vertiports, see: Ineco. “Vertipuertos, despegando hacia el mañana.” *Tramos 750*, 2024. https://www.transportes.gob.es/recursos_mfom/comodin/recursos/06_vertipuertos_despegando_hacia_el_manana.pdf.

103 For more details, see: World Economic Forum. *Autonomous Vehicles: Timeline and Roadmap Ahead*. Geneva: 2025. https://reports.weforum.org/docs/WEF_Autonomous_Vehicles_2025.pdf.

104 For more information on the evolution of transport between 1950 and 1980, see: Instituto de Estudios de Transportes y Comunicaciones. *Estadísticas de transportes. Series cronológicas (1950-1980)*. Madrid: Ministerio de Transportes, Turismo y Comunicaciones, 1983. https://www.fomento.gob.es/AZ.BBMF.Web/documentacion/pdf/M00386_1983.pdf. The number of passenger cars in Spain rose from 12 million in 1990 to more than 25 million in 2023. For more details, see: Dirección General de Tráfico. *Parque de vehículos - Series históricas 2023*. https://www.dgt.es/menusecundario/dgt-en-cifras/dgt-en-cifrasresultados/?q=parque&tema=vehiculos&pag=1&order=DESC%C2%A0. For more information on household vehicle ownership, see: INE. *Encuesta de características esenciales de la población y viviendas 2021. Vehículos de los hogares*. https://www.ine.es/dynt3/inebase/index.htm?padre=8981&capsel=9032. In 2007, the car remained the predominant mode of travel for holidays (61%). This was also the case in 2021, when it accounted for 79% of journeys for this purpose, although the data were strongly affected by COVID-19 mobility restrictions. See: Centro de Investigaciones Sociológicas. *Barómetro de Junio 2007*. Madrid: Study no. 7259, 2007. https://www.cis.es/documents/d/cis/Es2724mar_Apdf; and B*arómetro de Julio 2021*. Madrid: Study no. 14577, 2021. https://www.cis.es/documents/d/cis/es3330marpdf.

105 Between 2015 and 2023, the share of Spaniards aged 18 to 29 with a driving licence fell from 62.5% to 56%. Spain also has a large gender gap in this area: in 2023, 81% of men over 18 had a licence compared with 59% of women, who make greater use

of public transport. For more details, see: Dirección General de Tráfico. *Censo de conductores- Tablas estadísticas 2015 y 2023*. https://www.dgt.es/menusecundario/dgt-en-cifras/dgt-en-cifras-resultados/; INE. *Censo anual de población 2021-2023. Población por edad (año a año)*. https://www.ine.es/jaxiT3/Tabla.htm?t=68519&L=0; and *Estadística del Padrón continuo. Población por edad (año a año)*. https://www.ine.es/jaxi/Tabla.htm?path=/t20/e245/p08/l0/&file=01003.px&L=0; and Moral, María J. "Posesión del carnet de conducir: Falacias y realidades." *Papeles de Economía Española* no. 171, 2022. https://www.funcas.es/articulos/posesion-del-carnet-de-conducir-falacias-y-realidades/. Research conducted in the United Kingdom in 2018 already reflected the changing perception of cars among young people aged 16 to 21 compared with their parents' generation. For more details, see: Green, Judith, *et al*. "Automobility reconfigured? Ironic seductions and mundane freedoms in 16–21 year olds' accounts of car driving and ownership." *Mobilities 13*, no. 1, 2018. https://doi.org/10.1080/17450101.2017.1331017.

106 In recent years, particularly in English-speaking cities, policies have promoted the re-densification of dispersed urban development. In Spain, Vitoria is a notable example. For more details, see: Bajo, Fernando. "Otros procedimientos de intervención en la ciudad contemporánea: sobre la re-densificación." *ACE: Arquitectura, Ciudad y Entorno* 15, 2021. https://doi.org/10.5821/ace.15.45.9527; City of Toronto. *The Good Neighbour Guide. For residential infill construction*. https://www.toronto.ca/wp-content/uploads/2017/10/98ad-Good_Neighbour_Guide_Digital-shrunk.pdf; and Greenaway-McGrevy, Ryan, and James Allan Jones. "Can zoning reform change urban development patterns? Evidence from Auckland." *Urban Studies* 0, 2025. https://doi.org/10.1177/00420980241311521.

107 Spanish cities stand out for their high availability of nearby services compared with other parts of the world, thanks to their compact urban model. In Spain, the share of the population with nearby access to services ranges from 84% for hospitals, health centres and outpatient clinics to 93% for food-service establishments. However, people living in homes built in the 21st century have access to a smaller share of these services than those living in buildings constructed between 1951 and 2000. For more details, see: INE. *Encuesta de características esenciales de la población y las viviendas 2021. Viviendas principales según infraestructuras/servicios en la zona en que se ubica su vivienda*. https://www.ine.es/dynt3/inebase/index.htm?padre=8981&capsel=9605; and Sony CLS. "15minCity." Sony Computer Science Laboratories Rome, https://whatif.sonycsl.it/15mincity/. The 2001 data on distance to work come from the Census, while the 2021 data come from the Encuesta de Características Esenciales de la Población y Viviendas (ECEPOV). The figures are not strictly comparable because of a methodological change under which ECEPOV also includes journeys for study. For more details, see: INE. *Censo de población y viviendas 2001. Datos del lugar de trabajo. Tiempo de desplazamiento*. https://www.ine.es/censo/es/estructura.jsp?k=MDDB.COLECTIVO_P6; and *Encuesta de Características Esenciales de la Población y Viviendas 2021. Movilidad cotidiana*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=8981.

108 For more information on the relationship between urban form, private vehicles and walking, see: Delclòs Alió, Xavier, and Carme Miralles-Guasch. "Jane Jacobs en Barcelona: las condiciones para la vitalidad urbana y su relación con la movilidad cotidiana." *Documents d'Anàlisi Geogràfica* 67, no. 1, 2021. https://doi.org/10.5565/rev/dag.567; Newman, Peter, and Jeffrey Kenworthy. "Gasoline consumption and cities revisited: What have we learnt?" *Current Urban Studies* no. 3, 2021. https://doi.org/10.4236/cus.2021.93032; Newman, Peter, Leo Kosonen, and Jeffrey Kenworthy. "Theory of Urban Fabrics: Planning the Walking, Transit/Public Transport and Automobile/Motor Car Cities for Reduced Car Dependency." *Town Planning Review* 87, no. 4, 2016. https://doi.org/10.3828/tpr.2016.28; e International Transport Forum. *Reversing Car Dependency. Summary and Conclusions*. Paris: OECD, 2021. https://doi.org/10.1787/bebe3b6e-en.

109 Between 1980 and 2023, the distance travelled per person on domestic journeys in Spain doubled, from 4,847 kilometres per year to 9,765. Road travel rose from 4,317 kilometres to 8,239 kilometres; air travel from 154 kilometres to 809 kilometres; and rail travel from 375 kilometres to 717 kilometres. In 2023, road transport was the main mode for domestic travel (84%), while air transport was the main mode for international travel (50%). For more details, see: INE. Población residente por fecha, sexo y edad (desde 1971). https://www.ine.es/jaxiT3/Tabla.htm?t=56934; Instituto de Estudios de Transportes y Comunicaciones. Estadísticas de transportes. Series cronológicas (1950-1980). Madrid: Ministerio de Transportes, Turismo y Comunicaciones, 1983. https://www.fomento.gob.es/AZ.BBMF.Web/documentacion/pdf/M00386_1983.pdf; and Ministerio de Transporte y Movilidad Sostenible. Observatorio del Transporte y la logística en España. Transporte interior de viajeros (viajeros-kilómetro) por modo (en millones). https://otle.transportes.gob.es/; and Observatorio del Transporte y la logística en España. Transporte internacional de viajeros (viajeros) por modo (en millones). https://otle.transportes.gob.es/. Between 2015 and 2023, high-speed rail was the form of collective transport with the strongest growth in passenger numbers, increasing by 64%, well above the 15% recorded across all modes of transport. For more details, see: INE. *Estadística de Transporte de Viajeros. Total de viajeros por tipo, medio de transporte (terrestre, aéreo y marítimo) y distancia*. https://www.ine.es/dynt3/inebase/index.htm?padre=3156&capsel=3156; and Martín, Sergio, and Ángeles Táuler. Observatorio del ferrocarril en España. Informe 2022. Madrid: Ministerio de Transportes y Movilidad Sostenible, 2023. https://cdn.transportes.gob.es/portal-web-transportes/ferroviario/observatorio/ofe_2022_feb2024_v3.3_prot.pdf

110 Data available at: INE. *Estadística de Transporte de Viajeros. Total de viajeros por tipo, medio de transporte (terrestre, aéreo y marítimo) y distancia*. https://www.ine.es/dynt3/inebase/index.htm?padre=3156&capsel=3156; and *Población residente por fecha, sexo y edad (desde 1971)*. https://www.ine.es/jaxiT3/Tabla.htm?t=56934; *Instituto de Estudios de Transportes y Comunicaciones. Estadísticas de transportes. Series cronológicas (1950-1980)*. Madrid: Ministerio de Transportes, Turismo y Comunicaciones, 1983. https://www.fomento.gob.es/AZ.BBMF.Web/documentacion/pdf/M00386_1983; Martín, Sergio, and Ángeles Táuler. Observatorio del ferrocarril en España. Informe 2022. Madrid: Ministerio de Transportes y Movilidad Sostenible, 2023. https://cdn.transportes.gob.es/portal-web-transportes/ferroviario/observatorio/ofe_2022_feb2024_v3.3_prot.pdf; and Observatorio del Transporte y la logística en España. *Transporte interior de viajeros (viajeros-kilómetro) por modo (en millones)*. https://otle.transportes.gob.es/; and *Transporte internacional*

de viajeros (viajeros) por modo (en millones). https://otle.transportes.gob.es/.

111 For more information on variability in meal timing, see: Barragán, Rocío, *et al.* "Timing of Meals and Sleep in the Mediterranean Population: The Effect of Taste, Genetics, Environmental Determinants, and Interactions on Obesity Phenotypes." *Nutrients* 15, no. 3, 2023. https://doi.org/10.3390/nu15030708; Dashti, Hassan S., *et al.* "Timing of Food Intake: Identifying Contributing Factors to Design Effective Interventions." *Advances in Nutrition* 10, no. 4, 2019. https://doi.org/10.1093/advances/nmy131; and Saals, Bo, H. Myrthe Boss, and Gerda K. Pot. "Young people and adolescents have more irregular meals during the COVID-19 pandemic: A nested case-control study on chrono-nutrition before and during the COVID-19 pandemic." *Chronobiology International* 39, 2022. https://doi.org/10.1080/07420528.2022.2054347.

112 Between 1991 and 2022, the average number of years that an 80-year-old person lives alone increased from 2.6 to 7.5 years. For more details, see: García Jesús, Albert Esteve and Juan Galeano. "Hogares en transformación en España y Portugal." Observatorio Social Fundación "la Caixa". https://elobservatoriosocial.fundacionlacaixa.org/es/-/hogares-en-transformacion-en-espana-y-portugal. For more details on how often Spaniards have lunch or dinner at the homes of family or friends, see: Centro de Investigaciones Sociológicas. *Barómetro de Marzo 2017*. Madrid: Study no. 3170, 2017. https://www.cis.es/documents/d/guest/es3170marpdf. In 2022, 23% of people reported eating lunch or dinner alone during the week; however, when shorter eating occasions - such as breakfast, a mid-morning meal or an afternoon snack - were included, the proportion rose to 42%. On the relationship between the rise of one-person households, remote work and the expected increase in eating alone, see: Fundación Mapfre. *Alimentación en la sociedad del siglo XXI post pandemia: Decisión Alimentaria*. Madrid: Fundación Mapfre, 2022. https://noticias.fundacionmapfre.org/media/2023/03/Alimentacion_en_la_sociedad_Fundacion-Mapfre-ok.pdf. For further information on changes in shared eating and their impact on consumption habits, see: Díaz Méndez, Cecilia. "La alimentación en la sociedad española." *Investigación y Ciencia* no. 446, 2013. https://dialnet.unirioja.es/servlet/articulo?codigo=4472503; Díaz Méndez, Cecilia e Isabel García-Espejo. "Eating out in Spain: Motivations, sociability and consumer contexts." *Appetite* 119, no. 1, 2017. https://doi.org/10.1016/j.appet.2017.03.047; and "Homogeneidad y fragmentación en los hábitos alimentarios de los españoles. Una respuesta a través del análisis de los horarios, las relaciones y las normas alimentarias." *Revista Internacional de Sociología* 76, no. 3, 2018. https://doi.org/10.3989/ris.2018.76.3.17.360. On the health impact of sharing meals, see: De Neve, Jan-Emmanuel, *et al.* "The Social Power of Meals." In Helliwell, J. F. *et al.* (eds.). *World Happiness Report 2025*. Oxford: University of Oxford Wellbeing Research Centre, 2025. https://doi.org/10.18724/whr-g119-bv60; and López-Gil, José Francisco, *et al.* "Family Meals and Social Eating Behavior and Their Association with Disordered Eating among Spanish Adolescents: The EHDLA Study." *Nutrients* 16, no. 7, 2024. https://doi.org/10.3390/nu16070951.

113 In 1999, Spanish households made 45% of their food purchases in supermarkets, 18% in hypermarkets and 12% in traditional shops (fishmongers and butchers). In 2023, the figures were 65% in nearby supermarkets, 13% in hypermarkets and 5% in traditional shops. That same year, online purchases accounted for 2% of the total food basket. For more details on purchasing channels, see: Ministerio de Agricultura, Pesca y Alimentación. *Panel de consumo alimentario. Series anuales. Canales valor.* https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

114 For more information on the growing blurring of the distinction between food consumption inside and outside the home and the expansion of convenience foods, see: Peltner, Jonas, and Silke Thiele. "Convenience-based food purchase patterns: identification and associations with dietary quality, sociodemographic factors and attitudes." *Public Health Nutrition* 21, no. 3, 2017. https://doi.org/10.1017/S1368980017003378; Jackson, Peter, and Valerie Viehoff. "Reframing convenience food." *Appetite* 98, no. 1, 2016. https://doi.org/10.1016/j.appet.2015.11.032.

115 For more details, see: Centro de Investigaciones Sociológicas. *Turismo y Gastronomía (II).* Madrid: Study no. 3471, 2024. https://www.cis.es/documents/d/cis/es3471mar-pdf; Contreras, Jesús. "Cambios Sociales y Cambios en los Comportamientos Alimentarios en la España de la Segunda Mitad del Siglo XX." *Anuario de Psicología* 30 no. 2, 1999. https://dialnet.unirioja.es/servlet/articulo?codigo=2792534; Díaz Méndez, Cecilia. "La alimentación en la sociedad española". *Investigación y Ciencia* no. 446, 2013. https://dialnet.unirioja.es/servlet/articulo?codigo=4472503; Ministerio de Agricultura, Pesca y Alimentación. *Informe del consumo alimentario en España 2023*. Madrid, 2024. https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/informe_2023_alta_tcm30-685877.pdf; and *Panel de consumo alimentario. Series anuales. Socioeconómico consumo per cápita.* https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

116 For more information on the influence of technology on food preparation, see: Hinojosa-Nogueira, Daniel, *et al.* "Stance 4 Health Nutritional APP: A Path to Personalized Smart Nutrition." *Nutrients* 15, no. 2, 2023. https://doi.org/10.3390/nu15020276.

117 In 2024, 62% of Spaniards ate outside the home at least twice a month and only 8.6% said they never did so. Among those who eat out, 25% said their main reason was to avoid the daily routine of cooking. In 2022, among people who know how to cook and take on most or all related tasks, 63% spent between one and seven hours a week on this activity, 24.2% between eight and 14 hours, 11.5% more than 14 hours and 1.3% less than one hour. For more details on time spent cooking and cooking as a leisure activity among young people, see: Centro de Investigaciones Sociológicas. *Turismo y Gastronomía (II).* Madrid: Study no. 3471, 2024. https://www.cis.es/documents/d/cis/es3471mar-pdf; and Fundación Mapfre. *Alimentación en la sociedad del siglo XXI post pandemia: Decisión Alimentaria.* Madrid: Fundación Mapfre, 2022. https://www.fundacionmapfre.org/publicaciones/todas/alimentacion-sociedad-siglo-xxi-post-pandemia/.

118 Recent evidence shows that, although men's participation in domestic work has increased, gender inequalities remain substantial, especially in routine tasks such as food preparation and the day-to-day organisation of the household. Even after recent changes such as those observed during the pandemic, women continue to bear a greater burden both in domestic work and in its cognitive dimension, suggesting limited and

uneven convergence in the distribution of these tasks. For more information, see: Lütolf, Meret, and Dominique Oehrli. "What remains? Gendered patterns of unpaid work two years after the Covid-19 outbreak in five OECD countries." *Community, Work & Family,* 2024. https://doi.org/10.1080/13668803.2026.2618676; OECD. *Gender gaps in paid and unpaid work persist.* Paris: OECD Publishing, 2025. https://www.oecd.org/content/dam/oecd/en/publications/reports/2025/09/gender-gaps-in-paid-and-unpaid-work-persist_de465299/25a6c5dc-en.pdf; and Petts, R J., Daniel L. Carlson, and Jaclyn S. Wong. "Cognitive housework and Parents' relationship satisfaction." *Journal of Marriage and Family* 87, no. 4. 2025. https://doi.org/10.1111/jomf.13082.

119 For more details on generational changes in the shopping basket in Spain, see: Contreras, Jesús. "Cambios Sociales y Cambios en los Comportamientos Alimentarios en la España de la Segunda Mitad del Siglo XX." *Anuario de Psicología* 30, no. 2, 1999. https://dialnet.unirioja.es/servlet/articulo?codigo=2792534; Díaz Méndez, Cecilia. "La alimentación en la sociedad española. *Investigación y Ciencia* no. 446, 2013. https://dialnet.unirioja.es/servlet/articulo?codigo=4472503; and Ministerio de Agricultura, Pesca y Alimentación. P*anel de consumo alimentario. Series anuales. Socioeconómico consumo per cápita.* https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

120 Reducing meat consumption can lead to a less healthy diet if meat is replaced by ultra-processed foods high in sugars and fats. This substitution has been observed more often among people with lower incomes and lower levels of education, which may contribute to rising overweight and obesity. For more details, see: Levasseur, P., *et al.* "Potential unexpected effects of meat reduction in diet: Could educational attainment influence meat substitution strategies?" *Agricultural and Food Economics* 12, no. 4, 2024. https://doi.org/10.1186/s40100-024-00298-7. In 1990, the average Spaniard consumed 66.2 kg of meat per year, a figure that fell to 41 kg in 2023. Daily consumption also declined: between 2003 and 2020, the proportion of Spaniards aged 15 or over who ate meat every day fell from 18% to 9%, with an even larger decline among 25- to 34-year-olds (from 22% in 2006 to 12% in 2020). Despite this reduction, 66% of the population still eats meat at least three times a week, and for three in four Spaniards it remains a pillar of a healthy diet. For more details, see: Asociación de Fabricantes y Distribuidores. *Informe de tendencias 2024.* Madrid: Asociación de Fabricantes y Distribuidores, 2024. https://www.aecoc.es/guias/informe-de-tendencias-2024/; INE. *Encuesta europea de salud en España. Patrón de consumo de determinados alimentos según sexo y grupo de edad. Población de 15 y más años.* https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p420/a2019/p03/&file=pcaxis; and *Encuesta nacional de salud. Patrón de consumo de determinados alimentos según sexo y grupo de edad. Población de 1 y más años.* https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p419/a2017/p06/&file=pcaxis; and Ministerio de Agricultura, Pesca y Alimentación. *Panel de consumo alimentario. Series anuales. Socioeconómico consumo per cápita*. https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/. In 2020, 75% of the Spanish population took supplements, particularly food supplements (63%) and plant extracts (29%). In 1996, supplement use in Spain stood at 28%. On this issue, see: Baladia, Eduardo, *et al.* "Uso de Suplementos Nutricionales y Productos a Base de Extractos de Plantas en Población Española: Un Estudio Transversal." *Revista Española de Nutrición Humana y Dietética* 26, no. 3, 2022. https://dx.doi.org/10.14306/renhyd.26.3.1693; Contreras, Jesús. "Cambios Sociales y Cambios en los Comportamientos Alimentarios en la España de la Segunda Mitad del Siglo XX." *Anuario de Psicología* 30, no. 2, 1999. https://dialnet.unirioja.es/servlet/articulo?codigo=2792534; and Pera, Guillem, *et al.* "Consumo de suplementos vitamínicos y minerales en población adulta sana de cinco provincias de España." *Gaceta Sanitaria* 13, 1999. https://www.gacetasanitaria.org/es-pdf-S0213911199713786.

121 In 2023, alternative proteins became more prominent in diets. Three per cent of the population tried insects in the form of flour or protein snacks, while 8.5% incorporated seaweed snacks into their diet, an increase of 5 percentage points since 2019. On food innovation, examples and implications for future health, see: Carrillo, Lorena. *La comida del futuro*. Madrid: Fundación Innovación Bankinter, 2021; https://www.fundacionbankinter.org/wp-content/uploads/2021/09/Publicacion-PDF-ES-FTF_ComidaFuturo.pdf; De los Muros García, José Luis, and M. Montaña Cámara Hurtado. "Nuevos alimentos: margarinas enriquecidas con esteroles vegetales. Caso de estudio: margarina Flora pro. activ." *Nutrición clínica y dietética hospitalaria* 30, no. 1, 2010. https://dialnet.unirioja.es/servlet/articulo?codigo=3311213; López Sánchez de León, Lydia, *et al*. "Nuevos alimentos autorizados en la Unión Europea: análisis y valoración de sus especificaciones." *Revista del Comité Científico de la AESAN* 38, 2023. https://www.aesan.gob.es/AECOSAN/docs/documentos/laboratorios/ESPECIFICACIONES_NUEVOS_ALIMENTOS.pdf; Medina, Isabel, *et al. Producir alimentos sin agotar el planeta.* Madrid: Consejo Superior de Investigaciones Científicas, 2023. http://libros.csic.es/product_info.php?products_id=1721; Ministerio de Agricultura, Pesca y Alimentación. *Estrategia Nacional de Alimentación.* Madrid, 2025. https://www.mapa.gob.es/es/alimentacion/temas/estrategia-nacional/estrategianacionaldealimentacion_tcm30-700687.pdf; and Pirzadah, Tanveer Bilal, and Bisma Malik. "Pseudocereals as Super Foods of the 21st Century: Recent Technological Interventions." *Journal of Agriculture and Food Research* 2, 2020. https://doi.org/10.1016/j.jafr.2020.100052.

122 To analyse the evolution of per capita consumption, the change between the average for 1999-2003 and the average for the five most recent years available (2019-2023) was calculated. As spirits were first recorded in 2015, their change is calculated only between that year and 2023. For more details, see: Ministerio de Agricultura, Pesca y Alimentación. *Panel de consumo alimentario. Series anuales. Socioeconómico consumo per cápita.* https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

123 Technological innovation is transforming food systems through new forms of production, such as microbial proteins and cultivated meat. At the same time, the development of precision nutrition makes it possible to tailor diets to individual characteristics such as metabolism, the microbiome or allergies, pointing to a growing convergence between biotechnology and food. For more information, see: Estham, J. Lucas, and Adam R. Leman. "Precision fermentation for food proteins: ingredient innovations, bioprocess considerations, and outlook — a mini-

review." *Current Opinion in Food Science* 58, 2024. https://doi.org/10.1016/j.cofs.2024.101194; Kardas, Marek, Wiktoria Staśkiewicz-Bartecka, and Aleksandra Kołodziejczyk. "Cultured Meat Reformulation: Health Potential and Sustainable Food Challenges—Narrative Review." *Comprehensive Reviews in Food Science and Food Safety* 24, no. 6. 2025. https://doi.org/10.1111/1541-4337.70262; Shukla, Akash Deep, *et al*. "Precision Fermentation: Pioneering the future of sustainable and alternative animal protein production." *Applied Food Research*, 2026. https://doi.org/10.1016/j.afres.2026.102015; and Wu, Qihang, *et al*. "Opportunities and challenges ahead of the cultured meat: A review on key technology and mass production process." *Journal of Future Foods*, 2025. https://doi.org/10.1016/j.jfutfo.2025.10.007.

124 For more details, see: Carrillo, Lorena. *La comida del futuro*. Madrid: Fundación Innovación Bankinter, 2021; https://www.fundacionbankinter.org/wp-content/uploads/2021/09/Publicacion-PDF-ES-FTF_ComidaFuturo.pdf; Medina, Isabel, *et al*. *Producir alimentos sin agotar el planeta*. Madrid: Consejo Superior de Investigaciones Científicas, 2023. http://libros.csic.es/product_info.php?products_id=1721; and Ministerio de Agricultura, Pesca y Alimentación. *Panel de consumo alimentario. Series anuales. Socioeconómico consumo per cápita*. https://www.mapa.gob.es/es/alimentacion/temas/consumo-tendencias/panel-de-consumo-alimentario/series-anuales/.

125 In 2022, price was the main criterion when purchasing food for more than 60% of Spaniards, above the European average. For more details, see: FUHEM Ecosocial. *II Informe Ecosocial sobre calidad de vida en España. Evolución y desafíos*. FUHEM Ecosocial, 2026. https://www.fuhem.es/ii-informe-ecosocial-calidad-de-vida-en-espana/. On how unequal access to healthy and sustainable diets can affect different population groups, especially younger and more vulnerable people, see: FAO, IFAD, UNICEF, WFP y OMS. *The State of Food Security and Nutrition in the World 2023: Urbanization, Agrifood Systems Transformation and Healthy Diets across the Rural-Urban Continuum*. Rome: FAO, 2023. https://doi.org/10.4060/cc3017en.

126 In 2023, 58% of Spanish consumers showed a preference for reusable or biodegradable packaging when shopping. For more information, see: Hazarika, T. K., *et al*. "Edible coatings in extending the shelf life of fruits: a review." *Indian Journal of Agricultural Research* 57, no. 5, 2023. 10.18805/IJARe.A-5725; Ministerio de Agricultura, Pesca y Alimentación. *Estrategia Nacional de Alimentación*. Madrid, 2025. https://www.mapa.gob.es/es/alimentacion/temas/estrategia-nacional/estrategianacionaldealimentacion_tcm30-700687.pdf; and Núñez-Torrón, Andrea. "Trágate el táper, los nuevos envases comestibles hechos de algas o bioplásticos." El País, https://elpais.com/gastronomia/2025-03-11/tragate-el-taper-los-nuevos-envases-comestibles-hechos-de-algas-o-bioplasticos.html.

127 Life expectancy at birth for Spanish women increased from 81 years in 1992 to 85.7 in 2022, and is likely to reach 88.7 years in 2050. In 1961, 11.5% of deaths occurred during the first year of life and 22% after age 80; in 2022, 0.2% of deaths occurred during the first year of life and 62% after age 80. For more details, see: INE. *Defunciones (Cifras anuales). Por lugar de inscripción, sexo y edad. Total nacional y provincias (Serie histórica 1960-1974)*. https://www.ine.es/dynt3/inebase/index.htm?padre=1684&capsel=1684; *Esperanza de vida al nacimiento según sexo*. https://www.ine.es/dynt3/inebase/index.htm?padre=1153&capsel=1153; and T*ablas de mortalidad proyectadas 2024-2073: Esperanza de vida por edad y sexo*. https://www.ine.es/dynt3/inebase/index.htm?padre=6671&capsel=6672; and Olshansky, S. Jay, *et al*. "Implausibility of radical life extension in humans in the twenty-first century." *Nature Aging* 4, 2024. https://doi.org/10.1038/s43587-024-00702-3. Among Spanish women, the number of years of "unhealthy" life expectancy increased from 11.7 to 13.4 years over the period 1990-019. For more information, see: Permanyer, Iñaki, and Octavio Bramajo. "El aumento de la longevidad en Europa: ¿Añadiendo años a la vida o vida a los años?" *Perspectives Demogràfiques* 28, 2022. https://ced.cat/PD/PerspectivesDemografiques_028_ESP.pdf; INE. *Esperanza de vida en buena salud al nacer y a los 65 años. Brecha de género*. España. Serie 2004-2021. https://www.ine.es/ss/Satellite?L=es_ES&c=INESeccion_C&cid=1259926378861&p=%5C&pagename=ProductosYServicios%2FPYSLayout&param1=PYSDetalle&param3=1259924822888. By 2050, owing to population ageing, the number of people worldwide living with some form of dementia is expected to reach 153 million, up from 57 million in 2019. For more information, see: Nichols, Emma, *et al.* "Estimation of the global prevalence of dementia in 2019 and forecasted prevalence in 2050: an analysis for the Global Burden of Disease Study 2019." *The Lancet Public Health* 7, no. 2, 2022. https://doi.org/10.1016/S2468-2667(21)00249-8.

128 On the role of social determinants in shaping health behaviours and well-being, as well as the mechanisms through which preventive behaviours spread socially, see: Izadisabet, Farideh, Aliakbar Aminbeidokhti, and Sakineh Jafari. "Social determinants of health during and after coronavirus: a qualitative study." *BMC Public Health* 24, no. 283, 2024. https://doi.org/10.1186/s12889-024-17785-7; Vörös, András, *et al*. "A multilevel social network approach to studying multiple disease-prevention behaviors." *Scientific Reports* 15, no. 1718, 2025. https://doi.org/10.1038/s41598-025-85240-7; and World Health Organization. A conceptual framework for action on the social determinants of health. Geneva: World Health Organization, 2010. https://www.who.int/publications/i/item/9789241500852; and *Closing the gap in a generation. Healthy equity through action on the social determinants of health. Geneva*: World Health Organization, 2008. https://www.who.int/publications/i/item/WHO-IER-CSDH-08.1.

129 On the use of artificial intelligence for drug discovery, the development of genomic medicine and the prediction of cancer risk, see: Bian, Yuemin, and XiangQun Xie. "Generative chemistry: drug discovery with deep learning generative models." *Journal of Molecular Modeling* 27, no. 17, 2021. https://doi.org/10.1007/s00894-021-04674-8; and Yala, Adam, *et al*. "Toward robust mammography-based models for breast cancer risk." *Science Translational Medicine* 13, no. 578, 2021. https://doi.org/10.1126/scitranslmed.aba4373. CAR-T treatment against tumours involves transferring reprogrammed T lymphocytes to cancer cells. This method has proved successful in achieving remission in several types of cancer, with positive effects maintained over the long term. Stem cells, whether derived from genetic modification or primary cells, can replace and improve tissues and organs, helping to treat injuries and diseases. For more information, see: Brunet, Anne, Margaret A. Goodell y Thomas A. Rando. "Ageing and rejuvenation of tissue stem cells and their niches." *Nature reviews molecular cell biology* 24, no. 1, 2023. https://doi.org/10.1038/s41580-022-00510-w; Melenhorst, J. Joseph. "Decade-long leukemia remissions with persistence of

CD4 CAR T cells." *Nature* 602, no. 7897, 2022. https://doi.org/10.1038/s41586-021-04390-6.CRISPR technology and other gene-editing tools are driving new forms of personalised medicine aimed at correcting genetic alterations and developing more precise treatments for certain diseases. For more information, see: Everette, Kelcee A., *et al.* "Ex vivo prime editing of patient haematopoietic stem cells rescues sickle-cell disease phenotypes after engraftment in mice." *Natural Biomedical Engineering* 7, 2023. https://doi.org/10.1038/s41551-023-01026-0; Newby, Gregory A., *et al.* "Base editing of haematopoietic stem cells rescues sickle cell disease in mice." *Nature* 595, 2021. https://doi.org/10.1038/s41586-021-03609-w; and Oficina Nacional de Asesoramiento Científico. Informe de políticas. La tecnología CRISPR en agricultura, alimentación y salud. Madrid, 2025 https://www.onac.gob.es/novedades/publicaciones/Documents/250822-ONAC%20maquetacion%20informe-PDF%20online.pdf.

130 Between 1987 and 2020, the share of daily smokers aged over 15 fell from 55% to 23% among men and from 23% to 16% among women. In 2024, 31% of men and 23% of women aged 25 to 34 reported smoking daily. In 1995, daily alcohol consumption among people over 15 stood at 30% for men and 7.5% for women. By 2020, 22% of men and 18% of women aged 25 to 34 drank alcohol once or twice a week, while daily consumption did not exceed 10% in either group. This trend continued in 2024, reflecting a growing preference for healthier lifestyles. For more information, see: INE. *Encuesta europea de salud 2020. Frecuencia de consumo de bebidas alcohólicas en los últimos 12 meses según sexo y grupo de edad.* https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p420/a2019/p06/&file=pcaxis; OECD. *Tobacco consumption [DSD_HEALTH_LVNG@DF_HEALTH_LVNG_TC].* https://data-explorer.oecd.org/; Plan Nacional sobre Drogas. "Encuesta domiciliaria sobre uso de drogas 1995. Principales resultados." Ministerio de Sanidad, https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas_EDADES.htm; and Ministerio de Sanidad. *Portal Estadístico. Área de Inteligencia de Gestión. Prevalencia (%) de consumo de alcohol en España. Año: 2024. Tramo temporal: A diario en los últimos 30 días. Edad 25-34; and Prevalencia (%) de consumo de tabaco en España. Año: 2024. Tramo temporal: A diario en los últimos 30 días. Edad: 25-34.* https://pestadistico.inteligenciadegestion.sanidad.gob.es/publicoSNS/I/edades/datos-sobre-alcohol-y-otras-drogas.

131 In 1987, 31% of the adult population in Spain was sedentary in its main activity (e.g. work or study), rising to 38% in 2020. This increase in sedentary behaviour in people's main activity has, however, been accompanied by a greater share of people undertaking some form of physical exercise in their free time. Between 2006 and 2022, the percentage of people aged 16 or over who did no physical exercise in their leisure time fell from 36% to 26% among men and from 42% to 29% among women. For more information, see: INE. *Encuesta nacional de salud. Año 2006. Ejercicio físico en el tiempo libre población adulta según sexo y grupo de edad. Población 16 y más años*. https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p419/a2006/p07/&file=pcaxis; *Encuesta de condiciones de vida. Módulo 2022. Personas de 16 y más años según frecuencia de actividad física en el tiempo de ocio por sexo y edad*. https://www.ine.es/dynt3/inebase/es/index.htm?padre=9739; and Montero-Torreiro, María Fe. "Evolución de la prevalencia de sedentarismo en la población española entre los años 1987 y 2020." *Medicina Clínica* 162, no. 6, 2024. https://doi.org/10.1016/j.medcli.2023.10.010. On the relationship between screen time and sedentary behaviour, see: Peral-Suárez, África, *et al*. "Lifestyle Clusters of Diet Quality, Sleep, and Screen Time and Associations with Weight Status in Children from Madrid City: ENPIMAD Study." *Nutrients* 16, no. 13, 2024. https://doi.org/10.3390/nu16132096.

132 The data on daily tobacco use, alcohol consumption and sedentary behaviour show the percentage of men and women over 15 who smoked or were sedentary in their main activity in 1987, and who consumed alcohol daily in 1995, compared with the levels recorded in 2020. For more information, see: INE. *Encuesta europea de salud 2020. Frecuencia de consumo de bebidas alcohólicas en los últimos 12 meses según sexo y grupo de edad.* https://www.ine.es/dynt3/inebase/es/index.htm?type=pcaxis&path=/t15/p420/a2019/p06/&file=pcaxis; Plan Nacional sobre Drogas. "Encuesta domiciliaria sobre uso de drogas 1995. Principales resultados." Ministerio de Sanidad, https://pnsd.sanidad.gob.es/profesionales/sistemasInformacion/sistemaInformacion/encuestas_EDADES.htm; Montero-Torreiro, María Fe. "Evolución de la prevalencia de sedentarismo en la población española entre los años 1987 y 2020." *Medicina Clínica* 162, no. 6, 2024. https://doi.org/10.1016/j.medcli.2023.10.010; and OECD. *Tobacco consumption [DSD_HEALTH_LVNG@DF_HEALTH_LVNG_TC].* https://data-explorer.oecd.org/.

133 The historical trend comes from Feijoo *et al*., who estimate that obesity affected 7.3% of the population aged 15 or over in 1987 and 15.7% in 2020. The most recent figure comes from the INE's *Encuesta de salud de España 2023*, which puts obesity at 15.2% of the population aged 18 or over. The comparison should be regarded as approximate because of the different age thresholds. For more information, see: Feijoo, Laura, *et al*. "Prevalencia de la obesidad en España y en sus comunidades autónomas, 1987-2020." *Revista Española de Cardiología* 77, no. 10, 2024. https://doi.org/10.1016/j.recesp.2023.12.019; e INE. *Encuesta de salud de España 2023*. Madrid: INE, 2025. https://www.ine.es/dyngs/Prensa/ESdE2023.htm. Obesity is more prevalent in lower-income households. This difference is associated with social and material factors that make it harder to adopt healthy habits, such as tight budgets, unequal access to useful nutritional information and food environments in which the most affordable products are often also more calorie-dense. For more information, see: Hemmingsson, Erik, *et al*. "The social origins of obesity within and across generations." *Obesity Reviews* 24, no. 1, 2023. https://doi.org/10.1111/obr.13514.

134 By 2050, 21% of Spanish boys and 23% of Spanish girls aged five to 14 could have obesity. For more details, see: Kerr, Jessica A., *et al*. "Global, regional, and national prevalence of child and adolescent overweight and obesity, 1990–2021, with forecasts to 2050: a forecasting study for the Global Burden of Disease Study 2021." *The Lancet* 405, no. 10481, 2025. https://doi.org/10.1016/S0140-6736(25)00397-6.

135 The Plan Estratégico Nacional para la Reducción de la Obesidad Infantil 2022-2030 sets out a comprehensive response to excess weight in children, with measures aimed at promoting healthy eating, physical activity and reducing the social gap associated with obesity. This approach was subsequently reinforced by Royal Decree 315/2025 of 15 April, which establishes minimum nutritional quality and sustainability

criteria for food offered in educational centres and for school menu planning. For more information, see: Gobierno de España. *Plan Estratégico Nacional para la Reducción de la Obesidad Infantil 2022-2030*. Madrid: Gobierno de España, 2022. https://www.comisionadopobrezainfantil.gob.es/sites/default/files/2023-01/Plan_obesidad_Completo_DIGITAL_paginas_1_0.pdf; and Boletín Oficial del Estado. *Real Decreto 315/2025, de 15 de abril, por el que se establecen normas de desarrollo de la Ley 17/2011, de 5 de julio, de seguridad alimentaria y nutrición, para el fomento de una alimentación saludable y sostenible en centros educativos*. Madrid, 2025. https://www.boe.es/buscar/act.php?id=BOE-A-2025-7659.

136 Unwanted loneliness is the subjective feeling that results from not having the desired quantity and quality of social relationships, and it can arise at any stage of life. In 2024, 30% of young Spaniards aged 18 to 34 reported experiencing loneliness. This proportion is expected to remain stable or even increase, affecting more than 2.4 million young people in 2050. The figure remains similar regardless of whether the INE or Eurostat baseline demographic scenario is used. For more details, see: Eurostat. *Population on 1 January by age and sex [demo_pjan]*. https://ec.europa.eu/eurostat/data/database; *Population on 1st January by age, sex and type of projection [proj_23np]*. https://ec.europa.eu/eurostat/data/database; Hawkley, Louise C., *et al*. "Loneliness from young adulthood to old age: Explaining age differences in loneliness." *International Journal of Behavioral Development* 46, no. 1, 2020. https://doi.org/10.1177/0165025420971048; INE. *Resultados nacionales: serie 2024-2074. Población residente en España a 1 de enero, por sexo, edad y año*. https://www.ine.es/jaxiT3/Tabla.htm?t=36643&L=0; Joint Research Centre. *EU Loneliness Survey. European Commission,* 2022. http://data.europa.eu/89h/82e60986-9987-4610-ab4a-84f0f5a9193b; and Observatorio Estatal de la Soledad No Deseada. *Barómetro de la soledad no deseada en España*. Madrid: SoledadES, 2024. https://www.soledades.es/sites/default/files/contenidos/Informe_Barometro%20soledad.pdf. In 2022, 56% of young Spaniards aged 18 to 24 reported having experienced depression at some point in their lives. The same proportion reported having experienced prolonged anxiety at some point. These percentages are notably higher than the national averages, which stand at 42% for depression and 37% for prolonged anxiety. For more details, see: Blanchflower, David G., *et al*. "Further Evidence on the Global Decline in the Mental Health of the Young." *National Bureau of Economic Research Working Paper,* no. 32500, 2024. https://www.nber.org/papers/w32500; Confederación Salud Mental España y Fundación Mutua Madrileña. La situación de la salud mental en España. 2023. Madrid: Fundación Mutua Madrileña, 2023. https://www.fundacionmutua.es/documents/informe-salud-mental-espana-2023-bajo.pdf; and Lavikainen, Piia T., *et al*. "The Impact of Chronic Conditions on Productivity-Adjusted Life-Years in Both the Workplace and Household Settings in the General Adult Population in Finland." *Value in health: the journal of the International Society for Pharmacoeconomics and Outcomes Research* 28, no. 3, 2024. https://doi.org/10.1016/j.jval.2024.09.017.

137 By 2050, 4 billion people worldwide will have been diagnosed with some form of allergy, equivalent to 41% of the total population. This percentage has been calculated using the Naciones Unidas baseline world population projection. A similar pattern is assumed for Spain. For more details, see: European Academy of Allergy and Clinical Immunology. *Global Atlas of Allergy*. https://eaaci.org/books/global-atlas-of-allergy/; and Departamento de Asuntos Económicos and Sociales, ONU. 2024 *Revision of World Population Prospects [Medium variant-Total Population, as of 1 January (thousands)]*. https://population.un.org/wpp/. Between 1993 and 2017, the prevalence of allergies in Spain rose from 7% to 18% among women and from 5% to 14% among men. For more information on the incidence of allergies in Spain and the impact of climate change on their increase, see: Luschkova, Daría, Claudia Traidl-Hoffmann, and Alike Ludwig MD. "Climate change and allergies." *Allergo Journal International* 31, 2022. https://doi.org/10.1007/s40629-022-00212-x; and Ministerio de Sanidad. Encuesta europea de salud en España. *Serie 1987-2017*. https://www.sanidad.gob.es/estadEstudios/estadisticas/encuestaNacional/home.htm.

138 The World Health Organization certified Spain as malaria-free in 1964. For more information on vector-borne diseases, see: Ministerio de Sanidad. *Vigilancia entomológica: Resultados 2021. Plan nacional de preparación y respuesta frente a enfermedades transmitidas por vectores: dengue, chikungunya y zika*. Madrid, 2022. https://www.sanidad.gob.es/ciudadanos/saludAmbLaboral/docs/Informe_PlanVectores_2021.pdf; Global Malaria Programme. "Countries and Territories certified malaria-free by WHO 1955-2023." OMS, https://www.who.int/teams/global-malaria-programme/elimination/countries-and-territories-certified-malaria-free-by-who; and Sociedad Española De Enfermedades Infecciosas y Microbiología Clínica. *Las enfermedades infecciosas en 2050: Cómo serán las enfermedades infecciosas en 30 años*. Madrid: SEIMC, 2022. https://seimc.org/contenidos/documentoscientificos/seimc-LasEnfermedadesInfecciosasen2050.pdf.

139 Antibiotic use in Spain has declined in recent years, from 27.5 daily doses per 1,000 people in 2016 to 20 doses in 2021. Despite this reduction, Spain still has one of the highest levels of consumption compared with the average across OECD countries, which was 15.9 daily doses per 1,000 people in 2021. For more information, see: Chin, Kah Wei, *et al*. "An overview of antibiotic and antibiotic resistance." *Environmental Advances* 11, 2023. https://doi.org/10.1016/j.envadv.2022.100331; and OECD. *Pharmaceutical market [Pharmaceuticals consumption-Antibacterials for systemic use]*. https://data-explorer.oecd.org/. In 2021, Spain recorded 6,353 deaths directly attributable to antibiotic resistance and 31,600 deaths associated with it, representing 1.4% and 7% of all deaths, respectively. In high-income countries, the corresponding figures were 125,000 and 553,000 deaths (1% and 4.5% of the total), with projections estimating an increase to 192,000 and 883,000 deaths in 2050. If Spain maintains the same rate of growth, it could reach 13,337 attributable deaths and 82,160 associated deaths from this cause in 2050, representing 2% and 8.4% of all deaths. The number of deaths associated with antibiotic resistance would thus approach half the number caused by cancer, estimated at 182,577 deaths (30% of the total). For more details, see: INE. *Estadísticas de defunciones según causa de muerte*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176780&menu=resultados&idp=1254735573175#_tabs-1254736194710; Institute for Health Metrics and Evaluation. "MICROBE. Measuring Infectious Causes and Resistance Outcomes for Burden Estimation." Institute for Health Metrics and Evaluation. https://vizhub.healthdata.org/microbe/; Agencia Internacional para la Investigación en Cáncer, OMS. *Estimated numbers from 2022 to*

2050. https://gco.iarc.fr/tomorrow/en; Mohsen, Naghavi, *et al*. "Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050." *The Lancet* 404, no. 10459, 2024.https://doi.org/10.1016/S0140-6736(24)01867-1; and Ritchie, Hannah, and Edouard Mathieu. "How many people die and how many are born each year?" Our World in Data, https://ourworldindata.org/births-and-deaths.

140 For more information on the Plan Nacional frente a la Resistencia a los Antibióticos 2022-2024 and its continuation in PRAN 2025-2027, see: Agencia Española de Medicamentos y Productos Sanitarios. Plan Nacional frente a la Resistencia a los Antibióticos 2022-2024. Madrid: AEMPS, 2022. https://resistenciaantibioticos.es/es/publicaciones/plan-nacional-frente-la-resistencia-los-antibioticos-pran-2022-2024; and Agencia Española de Medicamentos y Productos Sanitarios. *Plan Nacional frente a la Resistencia a los Antibióticos 20252027*. Madrid: AEMPS, 2025. https://resistenciaantibioticos.es/es/publicaciones/plan-nacional-frente-la-resistencia-los-antibioticos-pran-2025-2027.

141 The projected number of older people in a situation of dependency in 2050 is obtained by applying the percentage of people aged 65 or over with officially recognised dependency in 2024 to the population forecast for that age group under Eurostat's baseline demographic scenario. The 2.7 million people represent 17% of the total population aged 65 or over in 2050. The results do not change significantly when using the population forecast for this age group under the INE baseline demographic scenario. For more information, see: Eurostat. *Population on 1 January by age and sex [demo_ pjan]*. https://ec.europa.eu/eurostat/data/database; IMSERSO. *Información estadística del sistema para la autonomía y atención a la dependencia 30 junio 2024 [33DICTCASAAD]*. https://imserso.es/el-imserso/documentacion/estadisticas/sistema-autonomia-atencion-dependencia-saad/estadisticas-mensual; e INE. *Resultados nacionales: serie 2024-2074. Población residente en España a 1 de enero, por sexo, edad y año.* https://www.ine.es/jaxiT3/Tabla.htm?t=36643&L=0. The projected share of people aged 65 or over who will live alone in 2050 is obtained by applying the percentage of one-person households by age group and sex in 2020 to the population structure projected for 2050 under the INE baseline demographic scenario. For more details, see: INE. *Encuesta continua de hogares 2020*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176952&menu=ultiDatos&idp=1254735572981; and *Proyección de la población de España. 2024-2074. Población residente en España a 1 de enero, por sexo, edad y año*. https://www.ine.es/dynt3/inebase/index.htm?padre=6671&capsel=6672.

142 The organisation of care is partly linked to economic inequalities: households with greater resources tend to have better access to formal services, while those with fewer resources rely more often on informal support. For more details, see: García, Javier, *et al*. "La relación entre la desigualdad económica y los cuidados en España: Un análisis a partir de la encuesta SHARE." *Papers* no. 2, 2026. https://doi.org/10.5565/rev/papers.3485; and Rodríguez, Pilar (coord.). *Evolución de los cuidados familiares a las personas mayores en España*. Fundación Pilares, 2024. https://www.fundacionpilares.org/publicacion/estudio-no8-evolucion-de-los-cuidados-familiares-a-las-personas-mayores-en-espana/.

143 In Spain, care for people with dependency needs relies heavily on informal, unpaid family care. The literature links this pattern to the central role of family support in long-term care. Although women still devote more time than men to these tasks, men's participation in care has increased in recent years. On this issue, see: Courbage, Christophe, Guillem Montoliu-Montes, and Joël Wagner. "The effect of long-term care public benefits and insurance on informal care from outside the household: empirical evidence from Italy and Spain." *The European Journal of Health Economics* 21, 2020. https://doi.org/10.1007/s10198-020-01215-7; and García-Mayor, Jesús, Antonio Moreno-Llamas, and Ernesto De la Cruz-Sánchez. "Health-related lifestyle of Spanish informal caregivers: Results from two national health surveys." *Family Relations* 72, no. 3, 2022. https://doi.org/10.1111/fare.12689. Although women continue to devote more time to care work than men, men's participation in these tasks has increased in recent years, a trend that is expected to continue in the future. For more information, see: Pérez Díaz, Julio, *et al*. *Un perfil de las personas mayores en España, 2023. Indicadores estadísticos básicos*. Madrid: CSIC, 2023. https://envejecimientoenred.csic.es/wp-content/uploads/2023/10/enred-indicadoresbasicos2023.pdf; and Sundström, Gerdt. "Men and older persons also care, but how much? Assesing amounts of caregiving in Spain and Sweden." *International Journal of Ageing and Later Life* 12, no. 1, 2018. https://doi.org/10.3384/ijal.1652-8670.17356.

144 Recent literature points to a reconfiguration of care towards more collaborative, place-based models. In particular, it highlights the potential of local organisations and community networks to sustain well-being in later life, especially in urban settings, as well as the transformation of solidarity norms in welfare states after the pandemic, with greater involvement from a wider range of actors beyond the family. For more information, see: Buffel, Tine, and Chris Phillipson. "Ageing in place in urban environments: building collaborative organisations for later life." *European Journal of Ageing* 22, no. 47, 2025. https://doi.org/10.1007/s10433-025-00875-9; and Pfau-Effinger, Birgit, and Patricia Frericks. "Solidarity in Welfare States During and After the Global Pandemic: A Theoretical Investigation." *Social Policy & Administration,* 2025. https://doi.org/10.1111/spol.70024. Recent evidence indicates that unwanted loneliness in later life is not a temporary phenomenon but a persistent condition with significant effects on physical and mental health, precisely because it is closely linked to the availability - or absence - of social and care networks. In this sense, social isolation is emerging as a growing public-health challenge whose response requires strengthening social ties and community support beyond the strictly healthcare sphere. For more information, see: Hajek, André, *et al*. "Chronic loneliness and chronic social isolation among older adults. A systematic review, meta-analysis and meta-regression." *Ageing & Mental Health* 29, no. 2, 2025. https://pubmed.ncbi.nlm.nih.gov/39126212/; and World Health Organization. *Social isolation and loneliness among older people*. Geneva: World Health Organization, 2021. https://iris.who.int/server/api/core/bitstreams/116323b7-0b9d-4c03-802b-741253da4fdb/content. For more information on national strategies aimed at addressing unwanted loneliness and moving towards a community-based, deinstitutionalised model of care, see: Ministerio de Derechos Sociales, Consumo y Agenda 2030. *Marco estratégico estatal de las soledades. 2026-2030*. Madrid: Ministerio de Derechos Sociales, Consumo y Agenda 2030, 2026. https://www.dsca.gob.es/sites/default/files/derechos-sociales/Marco_Estrategico_Soledades.pdf; and Ministerio de Derechos Sociales, Consumo y Agenda 2030. *Estrategia estatal para un nuevo modelo de*

cuidados en la comunidad. Un proceso de desinstitucionalización 2024-2030. Madrid: Ministerio de Derechos Sociales, Consumo y Agenda 2030, 2024. https://www.dsca.gob.es/sites/default/files/publicaciones/Estrategia-modelo-cuidados.pdf.

145 See: SHARE. Survey of Health, Ageing and Retirement in Europe. *Received help from others outside the household [SP002_mod]; and At least one child lives less than 1 km away [ch007]*. https://share-eric.eu/.

146 The concept of "ageing in place" refers to growing older in a chosen environment while maintaining social connections with the community, and it is the preferred option for most people in Spain. For more information, see: Díaz-Veiga, Pura, Mayte Sancho Castiello, and Teresa Martínez Rodríguez. "Unidades de convivencia para personas mayores en el marco del proceso de desinstitucionalización." *Zierbituzan* 78, 2022. https://ikusmirak.eus/es/zerbitzuan/unidades-de-convivencia-para-personas-mayores-en-el-marco-del-proceso-de-desinstitucionalizacion/me-0-582590/; Oficina de Ciencia y Tecnología del Congreso de los Diputados. *Envejecimiento y bienestar. Una radiografía de las personas mayores*. Madrid: Informe C, 2023. https://oficinac.es/sites/default/files/informes/OFICINAC_envejecimiento-bienestar_20231214_web.pdf; and Yarker, Sophie, Patty Doran, and Tine Buffel. "Theorizing 'Place' in Ageing in Place: The Need for Territorial and Relational Perspectives." *The Gerontologist* 64, no. 2, 2024. https://doi.org/10.1093/geront/gnad002. On the health benefits for older people of social relationships and housing arrangements such as intergenerational *cohousing*, see: Silberman-Bxeltramella, Mariela *et al*. "Social relations and health in older people in Spain using SHARE survey data." *BMC Geriatrics* 22, no. 276, 2022. https://doi.org/10.1186/s12877-022-02975-y; and Van Gasse, Dries, and Bente Wyninckx. "Social Support Exchange in Shared Living Arrangements with Older Adults–Exploring the Benefits of Intergenerational Living for Older Adults." *Journal of Population Ageing* 17, 2024. https://doi.org/10.1007/s12062-023-09427-4.

147 In recent years, employment growth in long-term care has, in many countries, lagged behind the growth of the older population, creating challenges for maintaining coverage in the future. OECD. Who Cares? *Attracting and Retaining Care Workers for the Elderly*. Paris: OECD Publishing, 2020. https://doi.org/10.1787/92c0ef68-en. The number of additional workers required in 2050 has been estimated by projecting the current ratio between beneficiaries of the Sistema para la Autonomía y Atención a la Dependencia (SAAD) and employment in the care sector. In December 2025, the system had 1,784,369 people entitled to benefits and 799,136 registered workers in the social-services sector, implying an approximate ratio of 2.2 beneficiaries per professional. Assuming this ratio remained constant, and given a projection of 2.7 million beneficiaries in 2050, the required workforce would amount to 1,209,205 workers. Compared with the current level, this would mean adding around 410,000 professionals to the care sector. Data available at: IMSERSO. *Información Estadística del Sistema para la Autonomía y Atención a la Dependencia. Informe del 31 de diciembre de 2025*. https://imserso.es/documents/20123/8989409/estsisaad_20251231.xlsx/43e00a53-8c01-d26c-64cc-8d042a920d97; e *Informe de Empleo en Sector Servicios Sociales. 4º trimestre de 2025*. https://imserso.es/documents/20123/10589990/inf_empleo_ss_4trim_2025.pdf/09f3ac12-7675-b936-a8fe-461085482874. For more information on the future of the care sector and its relationship with the foreign-born population, see: Oficina Nacional de Prospectiva y Estrategia (coord). *España ante el reto migratorio, análisis de dos futuros posibles*. Madrid, 2026. https://futuros.gob.es/nuestro-trabajo/reto-migratorio.

148 The term profiling refers to any automated processing designed to evaluate or predict aspects of a person. It should be distinguished from forms of personalisation that do not involve inferences about the individual. The regulatory debate focuses on the scope of consent as a mechanism of control in an environment characterised by information asymmetries between platforms and users. For more information, see: Berkeley Technology Law Journal. "AI Gets Personal: CCPA vs. GDPR on Automated Decision-Making." Berkeley Technology Law Journal. https://btlj.org/2025/04/ccpa-vs-gdpr-on-automated-decision-making/; Goodman, Bryce, and Seth Flaxman. "European Union Regulations on Algorithmic Decision-Making and a Right to Explanation." *AI Magazine* 38, no. 3, 2017. https://arxiv.org/abs/1606.08813; Kaminski, Margot E., and Gianclaudio Malgieri. "Algorithmic impact assessments under the GDPR: producing multi-layered explanations." *International Data Privacy Law* 11, no. 2, 2021, pp. 125– 144. https://doi.org/10.1093/idpl/ipaa020; and Rivas Vallejo, Pilar. "Ponderación de la protección de datos personales y la propiedad intelectual y secreto comercial en la aplicación del derecho a conocer la lógica del algoritmo." *Revista de Jurisprudencia Laboral*, 2025. https://www.boe.es/biblioteca_juridica/anuarios_derecho/abrir_pdf.php?id=ANU-L-2025-00000002878. For more information on the European framework for data protection, digital-platform transparency and artificial-intelligence regulation, see: Diario Oficial de la Unión Europea. *Reglamento (UE) 2016/679 del Parlamento Europeo y del Consejo de 27 de abril de 2016 relativo a la protección de las personas físicas en lo que respecta al tratamiento de datos personales y a la libre circulación de estos datos y por el que se deroga la Directiva 95/46/CE (Reglamento general de protección de datos)*. https://www.boe.es/doue/2016/119/L00001-00088.pdf; *Reglamento (UE) 2022/2065 del Parlamento Europeo y del Consejo de 19 de octubre de 2022 relativo a un mercado único de servicios digitales y por el que se modifica la Directiva 2000/31/ CE (Reglamento de Servicios Digitales)*. https://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32022R2065; and *Reglamento (UE) 2024/1689 del Parlamento Europeo y del Consejo de 13 de junio de 2024 por el que se establecen normas armonizadas en materia de inteligencia artificial y por el que se modifican los Reglamentos (CE) nº 300/2008, (UE) nº 167/2013, (UE) nº 168/2013, (UE) 2018/858, (UE) 2018/1139 y (UE) 2019/2144 y las Directivas 2014/90/UE, (UE) 2016/797 y (UE) 2020/1828 (Reglamento de Inteligencia Artificial)*. https://www.boe.es/doue/2024/1689/L00001-00144.pdf.

149 The term digital identity encompasses the set of data, content and elements associated with a person in digital environments, including both those with economic value, such as e-commerce accounts or cryptocurrencies, and those of a personal or sentimental nature, such as photographs, messages or social-media profiles. These elements have different characteristics and uses, which implies different management needs. For more information, see: Bundesgerichtshof por *III ZR 183/17, de 12 de julio de 2018*. https://op.europa.eu/en/publication-detail/-/publication/ab7f8ed2-d869-11e9-9c4e-01aa75ed71a1/language-en; Pearce, Hannah, and Edina Harbinja. "Digital

remains and post-mortem privacy in the UK: what do users want?" *International Journal of Law and Information Technology,* 2025. https://doi.org/10.1080/13600869.2025.2506164; and Rao, Neha. "Data after death: legal consequences of post-humous data management." *Brazilian Journal of Law, Technology and Innovation* 2, no. 2, 2024. https://doi.org/10.59224/bjlti.v2i2.71-83; and Uniform Law Commission. *Revised Uniform Fiduciary Access to Digital Assets Act (RUFADAA).* 2015. https://www.uniformlaws.org/viewdocument/final-act-with-comments-40. For more information on Spanish regulation of digital rights and the management of digital identity after death, see: Boletín Oficial del Estado. *Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos Personales y garantía de los derechos digitales.* https://www.boe.es/buscar/act.php?id=BOE-A-2018-16673.

150 On the most recent reforms to birth leave in Spain and their different impacts, see: Castellanos Serrano, Cristina, *et al. La reforma del sistema de permisos parentales: formas de uso y expectativas de influencia en la corresponsabilidad*. Madrid: UNED, Colección Informes, 2024. https://e-spacio.uned.es/entities/publication/34c79da6-823b-4890-adf1-455e6c7504cd; Dominguez-Folgueras, Marta, María José González, e Irene Lapuerta. "The Motherhood Penalty in Spain: The Effect of Full- and Part-Time Parental Leave on Women's Earnings." *Social Politics: International Studies in Gender, State & Society* 29, no. 1, 2022. https://doi.org/10.1093/sp/jxab046; Escobedo, Anna. "Una oportunidad de ampliación y mejora del sistema español de licencias remuneradas parentales y por cuidados familiares." *IgualdadES 7,* 2022. https://doi.org/10.18042/cepc/IgdES.7.09; and Meil, Gerardo. *Pautas de uso del permiso por nacimiento y cuidado*. 2022. https://portaldatos.seg-social.gob.es/documents/44402/0/PAUTAS+DE+USO+DEL+PERMISO+POR+NACIMIENTO+Y+CUIDADO+%281%29.pdf/97951ddf-6dbe-f2b0-c038-eb06ac49d1fb?t=1668167395449.

151 In Norway, parents can choose leave periods ranging from 49 to 59 weeks. In Iceland, each parent has 24 weeks of leave and may use the final six weeks at any time between the child's birth and second birthday. Parents in single-parent families in Sweden, Iceland and Norway are entitled to extend the total duration of paid birth leave. In Sweden, each parent is entitled to 34 weeks of leave and may transfer up to 45 days of this period to another trusted caregiver, such as the child's grandparent. On the models used in these countries, see: Blum, Sonja, *et al. 19th International Review of Leave Policies and Related Research 2023.* Vienna: International Network on Leave Policies and Research, 2023. https://doi.org/10.25365/phaidra.431; and Försäkringskassan. "Parental benefits." Försäkringskassan, https://www.forsakringskassan.se/english/parents/when-the-child-is-born/parental-benefit. In Spain, Constitutional Court ruling 140/2024 recognises the right of single-parent families to the additional 10 non-compulsory weeks corresponding to the second parent. For more information, see: Boletín Oficial del Estado. *Sentencia 140/2024, de 6 de noviembre 2024*. https://www.boe.es/boe/dias/2024/12/06/pdfs/BOE-S-2024-294.pdf#page=8.13; and Meil, Gerardo, Anna Escobedo, and Irene Lapuerta. "Spain Country Note." In Blum, Sonja, *et al. 19th International Review of Leave Policies and Related Research 2023.* Vienna: International Network on Leave Policies and Research, 2023. https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/annual_reviews/2023/Blum_etal_LPRN_full_report_2023.pdf. The current maximum paid-leave benefit is €4,495 per month, higher than the caps set in countries such as Sweden or Iceland. On the Swedish and Icelandic models, see: Blum, Sonja, *et al. 19th International Review of Leave Policies and Related Research 2023.* Vienna: International Network on Leave Policies and Research, 2023. https://www.leavenetwork.org/fileadmin/user_upload/k_leavenetwork/annual_reviews/2023/Blum_etal_LPRN_ full_report_2023.pdf.

152 This type of leave, limited to situations of acute illness, is structured separately from other existing instruments, such as leave of up to four days per year for urgent family reasons or the Social Security benefit for caring for children with serious illnesses. For more information, see: Boletín Oficial del Estado. *Real Decreto-ley 5/2023, de 28 de junio, por el que se adoptan y prorrogan determinadas medidas de respuesta a las consecuencias económicas y sociales de la Guerra de Ucrania, de apoyo a la reconstrucción de la isla de La Palma y a otras situaciones de vulnerabilidad; de transposición de Directivas de la Unión Europea en materia de modificaciones estructurales de sociedades mercantiles y conciliación de la vida familiar y la vida profesional de los progenitores y los cuidadores; and de ejecución y cumplimiento del Derecho de la Unión Europea*. Madrid, 2024. https://www.boe.es/eli/es/rdl/2023/06/28/5/con; and Seguridad Social. "Cuidado de menores afectados por cáncer u otra enfermedad grave." Seguridad Social, https://www.seg-social.es/wps/portal/wss/internet/InformacionUtil/44539/2046. In Portugal, there is leave of up to 30 days per year to care for sick children under 12, paid at 100% of net income (up to a maximum of 65% of gross income). The leave is an individual right, but it cannot be taken at the same time by both parents. For more details, see: ePortugal. "Having a child: Parental leave and absence from work." ePortugal, https://eportugal.gov.pt/en-GB/guias/ter-uma-crianca/dispensas-e-faltas-ao-trabalho-dos-pais#.

153 In Spain, policies supporting children have been based mainly on tax deductions for dependent children. However, these measures have a weaker redistributive effect than direct benefits because they are non-refundable. This means that a significant share of lower-income households - which are exempt from personal income tax - are excluded from access to this type of benefit. For more information, see: Hernández, Adrián, and Fidel Picos. "Income support to Families with Children in Spain." JRC *Working Papers on Taxation and Structural Reforms 10*, 2021. https://publications.jrc.ec.europa.eu/repository/handle/JRC125829; and Zalakain, Joseba. "La fiscalización de las políticas sociales: funcionamiento e impacto de las deducciones fiscales reembolsables." Zerbitzuan: Gizarte Zerbitzuetarako Aldizkaria. *Revista de Servicios Sociales* 68, 2019. https://dialnet.unirioja.es/servlet/articulo?codigo=7009230.

154 Countries such as Germany and Sweden extend support beyond early childhood: in Germany, the universal benefit amounts to €255 for each child under 18, while in Sweden €110 per month is paid until the child turns 16. By contrast, Spain remains one of the European countries that invests the least in social-protection benefits for families, allocating only 1.5% of GDP compared with the EU average of 2.4%. For more information, see: European Commission. "Employment, Social Affair & Inclusion: Sweden - Child allowance." European Commission,

https://ec.europa.eu/social/main.jsp?catId=1130&langId=en&intPageId=4804; Ministerio de Trabajo y Economía Social. "Subsidio familiar por hijos a cargo." Ministerio de Trabajo y Economía Social, https://www.mites.gob.es/mundo/consejerias/alemania/es/seguridad-social/ayudas-familiares/subsidio-familiar/index.html#; and Save the Children. El Coste de la Crianza en 2022. Madrid: Save the Children, 2022. https://www.savethechildren.es/coste-de-la-crianza.

155 For more information, see: Ministerio de Inclusión, Seguridad Social y Migraciones. "Características de los anticipos." Ministerio de Inclusión, Seguridad Social y Migraciones. https://www.portalclasespasivas.gob.es/sitios/clasespasivas/es-ES/PensionesPrestaciones/anticipospensionesalimenticias/Paginas/Caracteristicaspensionesalimenticias.aspx.

156 Since 1949, Finland has provided a welcome box to every newborn, containing essentials such as nappies and baby clothes, together with a congratulatory letter and advice for parents. The initiative, which has also been adopted in Scotland, underscores the importance of care during the first months of life, in line with the OECD's Estrategia de los primeros 1000 días. For more information, see: Näsi, E., and K. Koskenvuo. "The Finnish Baby box: from a volunteer initiative to renowned social security benefits." En de la Porte, *et al.* (eds.). *Successful Public Policy in the Nordic Countries – Cases, Lessons, Challenges*. Oxford: Oxford University Press, 2020. https://academic.oup.com/book/44441/chapter/376664176O; OECD. *Evolving family models in Spain: A new national framework for improved support and protection for families*. Paris: OECD Publishing, 2022. https://doi.org/10.1787/c27e63ab-en; and Scotland. "Baby box: Scotland's baby box is designed to give every single baby in Scotland an equal start in life." Scotland, https://www.scotland.org/live-in-scotland/progressive-scotland/baby-box.

157 In Spain, access to assisted-reproduction treatments through the Sistema Nacional de Salud is governed by Real Decreto 1030/2006, which establishes, among other criteria, that applicants must not already have a healthy child and, in the case of women, must not exceed certain age limits. The application of these criteria varies between autonomous communities, resulting in differences in access. For more information, see: Álvarez del Vayo, María, *et al*. "La odisea de acceder a la reproducción asistida pública según donde vivas." CIVIO, https://civio.es/medicamentalia/2021/11/16/diferencias-en-reproduccion-asistida-por-comunidades-autonomas/; and Boletín Oficial del Estado. *Real Decreto 1030/2006, de 15 de septiembre, por el que se establece la cartera de servicios comunes del Sistema Nacional de Salud y el procedimiento para su actualización*. Madrid, 2006. https://www.boe.es/eli/es/rd/2006/09/15/1030/con.

158 In Belgium, the public health system covers a total of six in vitro fertilisation attempts per woman, provided she is under 43 when treatment begins. In the Netherlands, up to six artificial-insemination attempts and three in vitro fertilisation attempts per woman are covered. For more details, see: Brussels IVF. "Practical information prior to starting ART treatment." Brussels IVF, https://www.brusselsivf.be/en/practical-info/; and Cornelisse, Simone. *Right time, Right stage. Embryo transfer policies in IVF*. Radbou Repository. https://repository.ubn.ru.nl/handle/2066/303423.

159 See: Gambaro, Ludovica, and Kitty Stewart, and Jane Waldfogel (eds.). *An equal start?: Providing quality early education and care for disadvantaged children*. Policy Press, 2014. https://doi.org/10.1332/policypress/9781447310518.001.0001; OECD. *Education at a Glance 2024: OECD Indicators*. Paris: OECD Publishing, 2024. https://doi.org/10.1787/c00cad36-en; and Van Huizen, Thomas, and Janneke Plantenga. "Do children benefit from universal early childhood education and care? A meta-analysis of evidence from natural experiments." *Economics of Education Review* 66, 2018. https://doi.org/10.1016/j.econedurev.2018.08.001.

160 An evaluation of the causal effect of Sweden's universal school-meal system found long-term improvements in the health, income and educational attainment of students who had access to the service (0.3 additional years of education on average), as well as in their mothers' labour-force participation (+5%). These effects were also larger among children from lower-income households, indicating that the programme helps reduce socioeconomic inequalities. For more information, see: Lundborg P., DanOlof Rooth, and Jesper Alex-Petersen. "Long-Term Effects of Childhood Nutrition: Evidence from a School Lunch Reform." *The Review of Economic Studies* 89, no. 2, 2022. https://doi.org/10.1093/restud/rdab028; and Storcksdieck Genannt Bonsmann S., *et al. Mapping of National School Food Policies across the EU28 plus Norway and Switzerland*. Luxemburgo: Publications Office of the European Union, 2014. https://publications.jrc.ec.europa.eu/repository/handle/JRC90452.

161 Available evidence for the 2019/2020 school year indicates that 47% of children in Spain take part in extracurricular activities linked to formal education, such as private tutoring, language classes or arts education. However, this share rises to 60% among high-income families, twice the rate recorded among children from low-income families. For more information, see: Martínez, Ángel, and Juan Manuel Moreno. "Educación en la Sombra en España: una radiografía del mercado de clases particulares por etapa escolar, capacidad económica de los hogares, titularidad de centro y Comunidad Autónoma." *EsadeEcPol Brief*, no. 35, 2023. https://www.esade.edu/ecpol/es/publicaciones/educacion-en-la-sombra-en-espana-una-radiografia-del-mercado-de-clases-particulares-por-etapa-escolar-capacidad-economica-de-los-hogares-titularidad-del-centro-y-comunidad-autonoma/. For examples from other countries, see: Radinger, Tomas, and Lucas Boeskens. "More time at school: Lessons from case studies and research on extended school days." OECD *Education Working Papers* 252, Paris: OECD Publishing, 2021. https://doi.org/10.1787/1f50c70d-en.

162 Bullying remains one of the greatest challenges for the education system. Currently, one in five primary-school children reports having experienced peer violence, a problem closely linked to early school leaving and the development of serious mental-health disorders. The KiVa anti-bullying programme has proved effective in countries as diverse as the Netherlands, Chile, Italy and New Zealand, and is already operating in some schools in Spain. On this issue, see: Kiva Program. "Kiva - A globally functioning network." Kiva Program, https://www.kivaprogram.net/kiva-around-the-world/; Nocentini, Annalaura, and Ersilia Menesini. "KiVa anti-bullying program in Italy: Evidence of effectiveness in a randomized control trial." *Prevention science* 17, 2016. https://doi.org/10.1007/s11121-016-0690-z; Salmivalli, Christina, Antti Kärnä, and Elisa Poskiparta. "Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied." *International Journal of Behavioral Development*, 35, no. 5, 2011.

https://doi.org/10.1177/0165025411407457; and Winslade, John, and Michael Williams. *Safe and peaceful schools: Addressing conflict and eliminating violence*. San Bernardino: Corwin Press, 2012. https://sk.sagepub.com/book/mono/safe-and-peaceful-schools/toc#_.

163 For more information on the relationship between split working hours, labour-force participation and fertility, see: Guner, Nezih, Ezgi Kaya, and Virginia Sánchez-Marcos. "Labor market institutions and fertility." *International Economic Review* 65, no. 3, 2024. https://doi.org/10.1111/iere.12708. On the relationship between commuting costs and women's labour-force participation, see: Farré, Lídia, Jordi Jofre-Monseny, and Juan Torrecillas. "Commuting time and the gender gap in labor market participation." *Journal of Economic Geography* 23, no. 4, 2023. https://doi.org/10.1093/jeg/lbac037; García, Pablo, and Matthijs Kalmijn. "Parents' family time and work schedules: The split-shift schedule in Spain." *Journal of Marriage and Family* 78, no. 2, 2016. https://doi.org/10.1111/jomf.12270; and Petrongolo, Barbara, and Maddalena Ronchi. "Gender gaps and the structure of local labor markets." *Labour Economics* 64, 2020. https://doi.org/10.1016/j.labeco.2020.101819.

164 In Spain, voluntary leave of absence can last from four months to five years, provided the worker has at least one year of service with the company. The employer is required to grant it if the worker has not taken such leave in the previous four years. However, voluntary leave does not count towards seniority and does not guarantee the right to return to the same job after it ends. For more details, see: Boletín Oficial del Estado. *Real Decreto Legislativo 2/20215, de 23 de octubre, por el que se aprueba el texto refundido de la Ley del Estatuto de los Trabajadores*. Madrid, 2015. https://www.boe.es/buscar/act.php?id=BOE-A-2015-11430. In some Australian states, employees become entitled to between six and eight weeks of paid leave after working continuously for between six and ten years. In France, the congé sabbatique allows unpaid voluntary leave of six to eleven months, subject to certain seniority and work-experience requirements. For more information, see: Fair Work. "Long service leave." Government of Australia, https://www.fairwork.gov.au/leave/long-service-leave; and Service Publique. "Employee sabbatical leave in the private sector." Government of the French Republic. https://www.service-public.fr/particuliers/vosdroits/F2381?lang=en.

165 On the effects of worker representation on corporate governance and management in Germany, Finland and other countries, see: Harju, Jarkko, Simon Jäger, and Benjamin Schoefer. "Voice at Work." *National Bureau of Economic Research Working Paper,* no. 28522, 2024. https://www.nber.org/papers/w28522; Jäger Simon, Benjamin Schoefer, and Jörg Heining. "Labour in the Boardroom." *Quarterly Journal of Economics* 36, no. 2, 2020. https://doi.org/10.1093/qje/qjaa038; and Jäger Simon, Shakked Noy, and Benjamin Schoefer. "What does codetermination do?" *National Bureau of Economic Research,* no. 28921, 2021. http://www.nber.org/papers/w28921. On the effects of mandatory profit-sharing between workers and firms in France, see: Nimier-David, Elio, David Sraer, and David Thesmar. "The Effects of Mandatory Profit-Sharing on Workers and Firms: Evidence from France." *National Bureau of Economic Research Working Paper,* no. 31804, 2023. https://www.nber.org/papers/w31804.

166 The civil law of Catalonia and Navarre includes arrangements similar to a friendship union, known respectively as "convivencia de ayuda mutua" and "comunidad de ayuda mutua". These arrangements provide legal certainty for their members but do not grant care-related rights. For more details, see: Boletín Oficial del Estado. *Ley 25/2010, de 29 de julio, del libro segundo del Código civil de Cataluña, relativo a la persona y la familia*. Madrid, 2010. https://www.boe.es/eli/es-ct/l/2010/07/29/25/con; *Ley Foral 21/2019, de 4 de abril, de modificación y actualización de la Compilación del Derecho Civil Foral de Navarra o Fuero Nuevo*. Madrid, 2019. https://www.boe.es/eli/es/l/1973/03/01/1/con.

167 De facto partnerships are regulated unevenly depending on the territory in which they are registered. The Proyecto de Ley de Familias seeks to advance their recognition through the creation of a State Register of De Facto Partnerships and the expansion of certain rights, opening the way to further developments in areas such as taxation and inheritance. For more information, see: Ribot Igualada, Jordi. "El reconocimiento de la diversidad de modelos familiares en el proyecto de Ley de Familias." *Anuario de Derecho Civil* 77, no. 1, 2024. https://www.boe.es/biblioteca_juridica/anuarios_derecho/articulo.php?id=ANU-C-2024-10021700250.

168 The Código Civil currently provides that at least two thirds of an estate must go to the so-called forced heirs: one third as the statutory reserved share and one third as the improvement share. Only the remaining third is freely disposable by the testator. For more details, see: Boletín Oficial del Estado. *Real Decreto de 24 de julio de 1889 por el que se publica el Código Civil*. Madrid, 1989. https://www.boe.es/buscar/act.php?id=BOE-A-1889-4763. For more details on attitudes towards inheritance in Spain, see: Ayuso, Luis. "Los españoles están a favor de dejar su herencia a sus hijos sin importar la relación que mantienen, sin condiciones previas ni diferencias entre ellos." Fundación BBVA. https://www.fbbva.es/noticias/espanoles-herencia-hijos-sin-importar-relacion/.

169 The ROPA method *(Reception of Oocytes from Partner)* allows one woman in a female couple to provide the oocytes and the other to carry the embryo, involving both in the reproductive process. Its exclusion from the common portfolio of the SNS does not reflect clearly established clinical criteria, but rather a regulatory omission. On how the method is structured and its position in comparative European law, see: European Society of Human Reproduction and Embryology (ESHRE). *Medically Assisted Reproduction in Europe 2019: Results Generated from European Registries*. Human Reproduction Open, 2023. https://doi.org/10.1093/hropen/hoad009. On the common portfolio of SNS services and the procedure for incorporating new benefits, see: Boletín Oficial del Estado, *Real Decreto 1030/2006, de 15 de septiembre, por el que se establece la cartera de servicios comunes del Sistema Nacional de Salud.* Madrid, 2006. https://www.boe.es/buscar/act.php?id=BOE-A-2006-16212.

170 The register does not create a new legal parent-child relationship or alter the parental authority of the legal parents; its function is strictly enabling, allowing a stable care relationship that currently lacks formal recognition to be demonstrated to third parties such as employers, healthcare centres or educational institutions. For more information, see: Farnós Amorós, Esther. "Autonomía privada y filiación: entre la libertad y la responsabilidad." *InDret: Revista para el Análisis del Derecho,* no. 4, 2020. https://indret.com/autonomia-privada-y-filiacion/. On comparative models for recognising non-biological care relationships, see: McGlynn, Clare. *Families and the European Union: Law, Politics and Pluralism*. Cambridge: Cambridge University Press, 2006.

171 The Comunitat Valenciana already has a law regulating and promoting collaborative housing. For more information, see: Diari Oficial de la Generalitat Valenciana. *Ley 3/2023, de 13 de abril, de la Generalitat, de viviendas colaborativas de la Comunitat Valenciana*. Valencia, 2023. https://dogv.gva.es/datos/2023/04/19/pdf/2023_4166.pdf.

172 Initiatives to promote intergenerational living and combat unwanted loneliness already exist in more than a dozen countries, including Spain. The most common model involves young people providing companionship and living with older people in exchange for reduced rent, with the amount varying according to the level of support provided. On *coliving* and its role in addressing housing vulnerability in later life, see: Martinez, Laura, *et al*. "More than just a room: A scoping review of the impact of homesharing for older adults." *Innovation in Aging* 4, no. 2, 2020. https://doi.org/10.1093/geroni/igaa011; and Quinio, Valentine, and Gemma Burgess. *Is co-living a housing solution for vulnerable older people?* Cambridge: Cambridge Centre for Housing & Planning Research, 2018. https://nationwidefoundation.org.uk/wp-content/uploads/2019/11/Final-report-coliving-_web-version.pdf. On the benefits of intergenerational living environments, the available empirical evidence points to gains for different generations. A meta-analytic review of non-family intergenerational programmes finds significant effects in improving young people's attitudes towards older people, as well as reducing depressive symptoms and increasing generativity, quality of life and, to a lesser extent, physical health among older people. For more information, see: Petersen, Jennifer. "A meta-analytic review of the effects of intergenerational programs for youth and older adults." *Educational Gerontology* 49, no. 3, 2023. https://doi.org/10.1080/03601277.2022.2102340.

173 "*Social prescribing*" is a referral model from primary care to non-clinical community activities and resources. It differs from pharmaceutical prescribing in that it does not require a formal medical diagnosis and is organised through a community link worker who acts as an intermediary between the healthcare system and local civil-society organisations. The main limitation identified in the literature is the uneven availability of community resources across territories, making the interoperable digital catalogue envisaged in the proposal particularly relevant. On evidence of effectiveness, see: Drinkwater, Clare, *et al*. "*Social prescribing*: less rhetoric and more reality. A systematic review of the evidence." BMJ Open 9, no. 4, 2019. https://doi.org/10.1136/bmjopen-2016-013384. On the NHS model as a reference for integration into primary care, see: NHS England. *Social Prescribing and Community-Based Support: Summary Guide*. London, 2019. https://www.england.nhs.uk/wp-content/uploads/2020/06/social-prescribing-summary-guide-updated-june-20.pdf.

174 The Plan Estatal de Vivienda 2026-2030, with funding of €7 billion, sets as its central objective increasing the stock of affordable housing under permanent protected status, with particular attention to young people and vulnerable groups. For more information, see: Ministerio de Vivienda y Agenda Urbana. *Plan Estatal de Vivienda 2026-2030*. Madrid: Gobierno de España, 2026. https://www.mivau.gob.es/vivienda/info-plan-estatal-de-vivienda-2026-2030.

175 Energy-efficiency and accessibility retrofitting of the existing building stock is one of the strategic lines of the *Plan Estatal de Vivienda 2026-2030*, which allocates 30% of its investment to this purpose, with the aim of improving energy efficiency and reducing primary-energy consumption in more than 260,000 homes. For more information, see: Ministerio de Vivienda y Agenda Urbana. *Plan Estatal de Vivienda 2026-2030*. Madrid: Gobierno de España, 2026. https://www.mivau.gob.es/vivienda/info-plan-estatal-de-vivienda-2026-2030.

176 A large share of inherited homes are used as second residences or remain vacant. This issue has already been studied in countries such as Norway and Australia. For more details on the uses of inherited housing, see: Gulbrandsen, Lars, y Åsmund Langsether. "Family transactions in the Norwegian housing market." *Housing, Theory and Society* 20, no. 3, 2003. https://doi.org/10.1080/14036090310017005; and O'Dwyer, Lisel. "Housing inheritance and the private rental sector in Australia." *Housing Studies* 14, no. 6, 1999. https://doi.org/10.1080/02673039982533.

177 For more information on the "3-30-300" rule, see: Konijnendijk, Cecil C. "Evidence-based guidelines for greener, healthier, more resilient neighbourhoods: Introducing the 3–30–300 rule." *Journal of Forestry Research* 34, no. 3, 2023. https://doi.org/10.1007/s11676-022-01523-z; and Nieuwenhuijsen, Mark J., *et al*. "The evaluation of the 3-30-300 green space rule and mental health." *Environmental research* 215, 2022. https://doi.org/10.1016/j.envres.2022.114387. The "Árboles para la Vida" plan of the ayuntamiento de Barcelona seeks to increase tree-canopy cover to 30% of the surface area of each zone, ensure that at least 40% of species are resilient to climate change, diversify biodiversity by preventing any one species from exceeding 15% of the total, and promote public education through interactive technologies. For more information, see: Ajuntament de Barcelona. *Árboles para vivir. Plan director del arbolado de Barcelona 20172037*. Barcelona: Ajuntament de Barcelona, 2017. https://bcnroc.ajuntament.barcelona.cat/items/b95b3c1e-0348-41f1-b849-1d379f961e49. On the application of similar strategies in other cities, see: Ciudad de Melbourne. "Urban Forest Strategy." Ciudad de Melbourne, https://www.melbourne.vic.gov.au/community/greening-the-city/urban-forest/Pages/urban-forest-strategy.aspx; and Ville de Paris. *Plan Arbre. Les actions de Paris pour l'arbre et la nature en ville*. 2021-2026. Paris: Ville de Paris, 2021. https://bibliotheques-specialisees.paris.fr/ark:/73873/pf0002389884.

178 On urban shade as a response to the climate emergency, see: Lenzholzer, Sanda. *Weather in the City: How Design Shapes Our Urban Climate*. Rotterdam: nai010 publishers, 2015. https://research.wur.nl/en/publications/weather-in-the-city-how-design-shapes-the-urban-climate/.; and Pearlmutter, David, *et al*. "Evaluating the Influence of Canyon Geometry and Orientation on Cooling the Urban Heat Island in Hot Arid Cities." *International Journal of Climatology* 26, 2006. https://doi.org/10.1002/joc.1330. On the CTE as a regulatory instrument, see: Boletín Oficial del Estado, *Real decreto 214/2006, de 17 marzo, por el que por el que se aprueba el Código Técnico de la Edificación. Madrid, 2006*. https://www.boe.es/buscar/doc.php?id=BOE-A-2006-5515.

179 This policy reinforces the preventive measures of the "Plan Estratégico de Salud y Medioambiente" and complements initiatives such as the "ES-Alert" system of the Centro Nacional de Seguimiento y Coordinación de Emergencias (CENEM). For more details, see: La Moncloa. "El sistema de avisos a la población ante emergencias estará operativo desde el 22 de febrero en toda España." La Moncloa, https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/interior/Paginas/2023/210223-sistema-avisos-poblacion-emergencias.aspx; and Ministerio de Sanidad y Ministerio para la Transición Ecológica y el Reto Demográfico. *Plan Estratégico de Salud y Medioambiente: 2do Programa de Actuación 2024-2025*.

Madrid, 2024. https://www.sanidad.gob.es/areas/sanidadAmbiental/pesma/programasActuacion/docs/2do_PA_PESMA.pdf.

180 On existing demand-responsive mobility services in rural areas, see: Comunidad de Madrid. "La Comunidad de Madrid suma 28 licencias de taxi para cubrir el servicio de transporte a demanda en la Sierra Norte." Comunidad de Madrid, https://www.comunidad.madrid/noticias/2024/04/12/comunidad-madrid-suma-28-licencias-taxi-cubrir-servicio-transporte-demanda-sierra-norte; and Consejería de Fomento, Articulación del Territorio y Vivienda. "Programa Andalucía Rural Conectada." Junta de Andalucía, https://www.juntadeandalucia.es/organismos/fomentoarticulacionelterritorioyvivienda/areas/servicios-transporte/transporte-publico/paginas/andalucia-rural-conectada.html.

181 For more information, see: European Cyclists' Federation. "Money for bikes: tax incentives and purchase premiums for cycling in Europe." European Cyclists' Federation, https://ecf.com/resources/financial-incentives; Ministerio de Economía, Hacienda y Soberanía Industrial y Digital. "Cycle Bonus: Everything you need to know." Government of France, https://www.economie.gouv.fr/particuliers/prime-velo-electrique#; and Belgian Federal Public Service Mobility and Transport. "Tax benefits and bicycle bonuses." Belgian Federal Public Service Mobility and Transport, https://mobilit.belgium.be/fr/mobilite-durable/velos/avantages-fiscaux-et-primes-velo.

182 For more details, see: Government of Singapore. "Healthier Dining Programme." Government of Singapore, https://hpb.gov.sg/healthy-living/food-beverage/healthier-dining-programme; and Seo, Sunhee, and Hyunjeong Lee. "What makes restaurateurs adopt healthy restaurant initiatives?" *British Food Journal* 119, no. 12, 2017. https://doi.org/10.1108/BFJ-06-2016-0285.

183 A WHO Europe report recommends mandatory warnings on alcoholic-beverage labels, with clear messages about their link to cancer. It emphasises that warnings should be visible and well designed. As part of the report, a study in 14 European countries confirmed that these labels increase awareness of the risk and are more effective than other messages. For more details, see: OMS. *Alcohol health warning labels: a public health perspective for Europe*. Copenhague: Oficina Regional de la OMS para Europa, 2025. https://iris.who.int/bitstream/handle/10665/380399/9789289061681-eng.pdf?sequence=4.

184 For more information, see: Bonnie, Richard J., and Emily P. Backes (eds.). *The Promise of Adolescence. Realizing Opportunity for All Youth*. Washington, DC: The National Academies Press, 2019.; Mahoney, Joseph L., Angel L. Harris, and Jacquelynne S. Eccles. "Organized Activity Participation, Positive Youth Development, and the Over-Scheduling Hypothesis." *Social Policy Report* 20, no. 4, 2006. https://doi.org/10.1002/j.2379-3988.2006.tb00049.x; and WHO. *Guidelines on mental health promotive and preventive interventions for adolescents*. Geneva: WHO, 2020. https://www.who.int/publications/i/item/guidelines-on-mental-health-promotive-and-preventive-interventions-for-adolescents.

185 For more information on how to integrate support from nutritionists into primary care, see: Benítez Brito, Nestor, *et al*. "Situación del dietista-nutricionista en el Sistema Nacional de Salud Español: documento de posicionamiento del Grupo de Especialización en Nutrición Clínica y Dietética de la Academia Española de Nutrición y Dietética." *Revista Española de Nutrición Humana y Dietética* 24, no. 3, 2020. https://dx.doi.org/10.14306/renhyd.24.3.1059.

186 For more information on current plans concerning antibiotic use among the Spanish population, see: Agencia Española de Medicamentos y Productos Sanitarios. *Plan Nacional frente a la Resistencia a los Antibióticos 2022-2024*. Madrid: AEMPS, 2022. https://resistenciaantibioticos.es/es/publicaciones/plan-nacional-frente-la-resistencia-los-antibioticos-pran-2022-2024; and Agencia Española de Medicamentos y Productos Sanitarios. *Plan Nacional frente a la Resistencia a los Antibióticos 2025-2027*. Madrid: AEMPS, 2025. https://resistenciaantibioticos.es/es/publicaciones/plan-nacional-frente-la-resistencia-los-antibioticos-pran-2025-2027. For international experiences, see: OECD. *Health at a Glance 2023: OECD Indicators*. Paris: OECD Publishing, 2023. https://doi.org/10.1787/7a7afb35-en; Pombo Romero, Julio, *et al*. "Evaluación del programa piloto de dispensación de medicamentos en dosis personalizada en Galicia." *Gaceta sanitaria* 21, no. 1, 2007. https://scielo.isciii.es/pdf/gs/v21n1/original2.pdf; and Treibich, Carole, *et al*. "The expected and unexpected benefits of dispensing the exact number of pills." *PloS one* 12, no. 9, 2017. https://doi.org/10.1371/journal.pone.0184420.

187 For more information on the use of artificial intelligence in healthcare, see: Oficina Nacional de Prospectiva y Estrategia (coords). *HispanIA 2040. Cómo la IA mejorará nuestro futuro*. Madrid: Ministerio de la Presidencia, 2025. https://futuros.gob.es/sites/default/files/2025-01/HispanIA_2040.pdf. On the potential of CRISPR technology: Oficina Nacional de Asesoramiento Científico. Informe de políticas. La tecnología CRISPR en agricultura, alimentación y salud. Madrid, 2025. https://www.onac.gob.es/novedades/publicaciones/Documents/250822-ONAC%20maquetacion%20informe-PDF%20online.pdf.