Active Ageing Index at subnational level in Spain

Pilot Study

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Executive summary

"Pilot study: Active Ageing Index at subnational level in Spain" calculates the Active Ageing Index (AAI) at subnational level in Spain for three points in time. The AAI is a composite measure that indicates how much of the potential of older men and women to contribute to economy and society is used in a given country, region or other type of locality. This report includes the AAI results at Spain's NUTS-2 level for 2008, 2012 and 2016. Additionally, analysis of the evolution of the overall AAI, domain-specific scores and indicators over time in the different regions is presented. Data are provided for men and women in order to comprehend the gender gap. Thus, some insights can be obtained, pointing to areas where enabling environments for active ageing can be improved and more of the potential of older people can be harnessed.

The pilot study carried out shows that the AAI can be calculated for Spain at a regional level, or NUTS-2, using secondary data from national sources based mainly on large statistical operations for regions with the largest sample sizes. The focus of this study is related to the importance of regional level policies to active ageing outcomes. Thus, if the AAI can be used at subnational level to monitor changes over time, it may provide valuable information to improve policies and results in relation to active ageing.

The methodology of this study closely follows the original AAI approach, but it was not possible to replicate all the indicators, especially those that compose the domain "participation in society". For this reason, calculation of the AAI for Spain was also executed in order to compare these data to the original European Union (EU) AAI calculation for Spain. The results obtained in this study at the national level are calculated in line with those obtained with the EU-AAI for Spain. It is, therefore, possible to identify differences caused by the adapted methodology. In this regard, methodology and adaptations realised are detailed in the report to enable readers to conduct future calculations in order to analyse the trends and the impact of age-related policies that are implemented in different territories.

Key findings

The maximum result for the overall AAI in 2008 was 34.6 points in Catalonia, and it was 36.2 points in the Balearic Islands in 2016. The regions with high overall AAI results had a similar pattern across the domains, but some showed lower scores in one or two domains. Thus, areas for improvement can be identified for all regions. During the eight-year period analysed, a general slight increase was observed in most regions, and there was an average increase for Spain of approximately 1.5 points. This progress was found, notwithstanding the global circumstances of this period, such as the economic crisis and policies (austerity measures) that have been implemented. The augmentation of the scores was observed in all the domains except social participation. The anomaly in the case of social participation may be related to data comparability problems. Finally, the gender gap seems to have been narrowing across the period 2008–2016. Although the ranking of countries is expected to stimulate learning from the experiences of other countries, this study is not primarily focused on a comparative account.

Concluding remarks

Despite the inherent limitations related to the sample sizes and comparability of indicators of the second domain over time, interesting conclusions can be derived from this pilot study. The calculation of the AAI at subnational level is important since policies that impact on active ageing dimensions are often designed and applied at local and regional levels. Calculating subnational AAI can assist in analysing the current influences of policies and designing new sustainable ones to enhance an enabling

environment for active ageing and allow for higher levels of realisation of the potential of older men and women. This can be achieved by using quantitative evidence-based results that the AAI offers to identify areas where challenges exist and establishing goals to be reached. If the AAI is considered a common tool to monitor active ageing at subnational level, decisions should be made in order to obtain good quality data for the territorial divisions. This pilot study has evidenced the areas that should be improved in order to obtain good quality data to calculate this index as it was originally defined. Despite some limitations, the study provides a number of recommendations for improvements.

Introduction

Aim of the pilot study

The main aim of this study is to calculate and analyse the Active Ageing Index (AAI) for Spain at subnational level (NUTS-2) for at least three points in time. This general aim requires two further, specific objectives. The first objective is related to the policy relevance of the calculation of the AAI at regional level or NUTS-2; the second objective is related to the methodological field and the adaptations, if required, in order to meet the stated aim.

Thus, the policy relevance of the calculation of the AAI at regional level was explored. Some decisions concerning ageing policies and environmental conditions are made at regional level. Having a tool that allows the measurement of the impact of such ageing-related policies is useful for the regions in order to know in which domain(s) of active ageing their policies have an impact, either positive or negative. It is important to remark that the aim of the comparison among the regions is to learn about good practices related to the active ageing of the population in other regions or countries. It is not intended to create a ranking. Findings derived from this analysis may allow for the improvement of the focus on ageing-related policies. Another important aspect is that higher AAI scores refer to higher levels of realisation of older people's potential to contribute to the economy and society. In this regard, it is best to avoid using the terms "good" or "bad", "better" or "worse" when interpreting the AAI results. Furthermore, the context and the circumstances are significant for interpretation. For instance, high scores in the employment rate for those aged 65–69 can mean that there are better options for employment for older people, such as non-ageist employment policies, but it can also mean that the pensions system does not provide good living conditions for people and they need to continue being active in the labour market. Numbers need to be contextualised in order to provide the real significance of the activity shown by them.

Regarding the methodological objective, this pilot study describes whether and how the calculation of the AAI at the regional level in Spain is possible, using secondary data from national surveys. In this sense, data sources from the national statistical operations were reviewed in order to understand the availability of the required data at regional level. In the selection of the data sources, those which were conducted repeatedly were preferred in order to allow the calculation of the AAI at different points in time and to observe the evolution of the regions. Some decisions were made in order to guarantee the reliability of the data (see the methodology section for details).

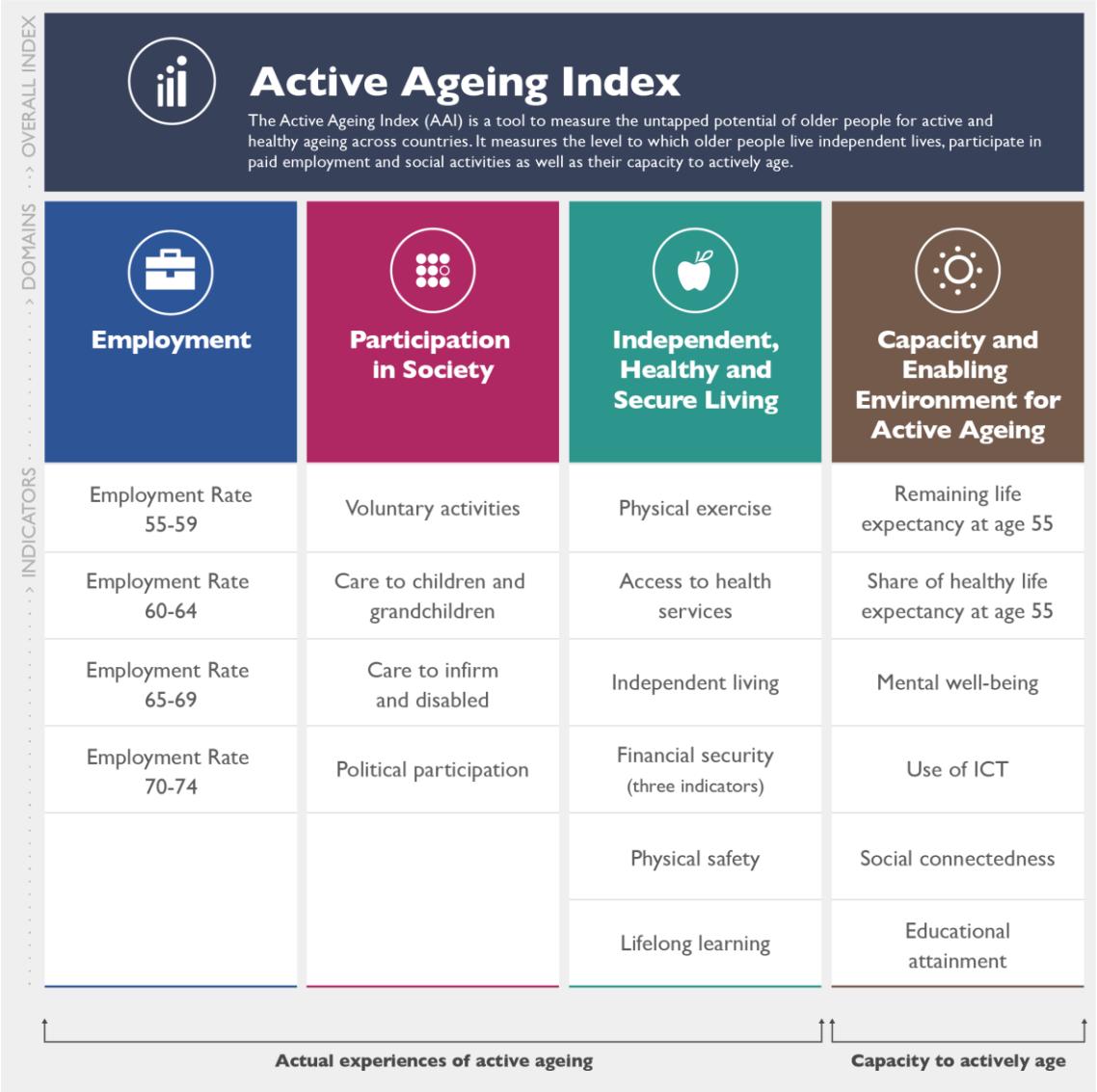
Active Ageing Index

The Active Ageing Index is a tool that was elaborated in order to provide information to policymakers on how much of the potential of older persons to contribute to the economy and society is used. It also supplies data on the extent to which the environment is allowing for active ageing in a given territory. Interventions, strategies and decisions can, therefore, be made based on this quantitative evidence. A broad concept of active ageing was adopted as a guideline, and included not only participation in the labour market but also unpaid contributions through social participation. Additionally, it incorporates other ways of contributing, which are key aspects for older people's lives, such as health behaviours and access to health care, financial elements, independence and security (Zaidi et al., 2013). Initially, in 2012, the AAI was calculated for the European Union (EU) and, subsequently, it has been extended to both non-EU countries and to more regional and local levels, including NUTS-2 and NUTS-3 (UNECE / European Commission, 2015; UNECE / European Commission, 2019). In Italy the AAI was calculated at NUTS-1 (UNECE / European Commission, 2019); in Poland it was calculated at

NUTS-2 (UNECE / European Commission, 2017); and in Germany it was calculated at NUTS-3 (UNECE / European Commission, 2016).

The AAI consists of 22 indicators grouped into four domains, which capture the multidimensionality of the active ageing concept. The overall index offers an overview of a given territorial entity (e.g., region) in terms of active ageing, while the domain scores and indicator values provide more detailed information. Three domains capture the active ageing outcomes of a territory at a specific point in time, whereas, the fourth domain aims to capture the capacity to enable and foster active ageing. The latter is also considered to be active ageing capital.

Figure 1: Active Ageing Index



Source: Active Ageing Index project. https://statswiki.unece.org/display/AAI/Active+Ageing+Index+Home

The AAI is constructed following several steps: each indicator and domain has an assigned weight; the domain score is calculated as the weighted arithmetic average of indicators, and the overall score as the weighted arithmetic average of domain scores. The results could be presented as a ranking, which helps to understand the state and performance of a territory compared to others. A ranking allows quick access to information on where good practices in a specific topic may be found (such as promoting volunteering) and thus facilitates learning from others. Furthermore, some goals can be

established by users (e.g., policymakers) to be reached in these terms, depending on the needs and context. For instance, the goal could be a result obtained by a region or a territorial entity with higher values in a specific indicator or domain; or an overall AAI value calculated using maximum scores achieved by a set of countries in a given period of time; or a territory's own results in the past as a benchmark to surpass.

Thus, the AAI allows extracting two types of information: first, the actual and current experiences of active ageing of a population or subpopulation group; second, the unrealised potential of older people in a territory, which can be enhanced in order to increase the active ageing level. However, the information provided by the indicators should be contextualised to understand better the situation of older people in regard to each indicator. This is especially important since all the indicators (and, therefore, the domain scores and the overall index) are defined as positive (meaning the higher the value the higher the level of realisation of the older persons' potential) and value judgement may be implicit. In specific cases, higher values, which reflect higher levels of activity are not necessarily "better" results, but are sometimes due to the circumstances in which they take place. Under certain circumstances, this could be the case with the indicators related to employment rate at the age group 65–69 or 70–74 or with indicators related to provision of care.

Taking these factors into consideration, the information provided by the AAI is useful to policymakers in order to have an overview of the strengths and weaknesses of a territory in terms of the different domains and to guide interventions based on evidence as well as to monitor evolution after implementation of policies and interventions. In Spain, as several topics about active ageing are decided at regional level, a calculation at this level could be of interest.

1. Context of the regions in Spain

1.1. Demographic context

Spain is facing two demographic challenges: population decline and population ageing. On 1 January 2016, the Spanish population was 46.4 million. The regions with higher levels of population decline in the last decade have been the north-western ones, especially Castilla y León and Asturias (National Statistics Institute [Instituto Nacional de Estadística, INE], 2018). The largest age group in 2008 was the 30–34, while, in 2016, it was the 40–44, or the age group born in 1970–1975. The baby boom in Spain took place between 1958 and 1977 (Abellán, Aceituno, Pérez, Ramiro, Ayala & Pujol, 2019). During the period 2008–2016, the share of people aged 55 and over rose from 27.3 per cent to 30.7 per cent. Women represent the overall majority of the population, but their prevalence starts at age 50–54 and becomes more accentuated at more advanced ages. In 2016, people aged 80 and over represented approximately 6 per cent of the population (data from INE, several years).

Regarding the differences across regions, Asturias, Castilla y León and Galicia are the oldest autonomous communities, with a share of people aged 55 and plus over 35 per cent in 2016. On the other hand, Murcia, Balearic Islands and Canary Islands have the lowest proportions of people aged 55 and over, with below 27 per cent. Catalonia, Andalusia and Madrid are the regions with the highest number of older people, as these three are the regions with the higher number of people in general (Abellán & Pujol, 2016; data from INE, 2016).

The number of births has been constantly falling since 2009 and currently Spain has a total fertility rate below the replacement fertility rate (INE, 2018). Additionally, the population is ageing and the natural increase of the population has been negative since 2015. Even though the annual growth of the population decreased between 2008 and 2013, since 2014 it has been increasing because of migration.

Thus, since 2016 Spanish population growth became positive because of a positive migration balance, with a relative growth of 0.19 (INE, 2018).

The total fertility rate decreased from 1.44 in 2008 to 1.34 in 2016, and a slight increase was observed between 2012 and 2016 (1.32 until 2016). This trend was observed in general among regions, except for the Basque Country (from 1.30 to 1.39 in 2008 and 2016 respectively) and Melilla (2.27 and 2.47 in 2008 and 2016 respectively) (INE, 2008, 2016). The regions with the highest total fertility rate in 2016 were Murcia, Navarra, Andalusia and Catalonia, together with Ceuta and Melilla, with values over 1.4. On the other hand, the regions with lowest fertility rates were Asturias (1.04) and Canary Islands (1.06) (INE, 2017).

Life expectancy also varies among regions reflecting the consequences of health, social and economic policies. Life expectancy at birth increased from 81.3 in 2008 to 83.1 in 2016. Female life expectancy grew from 84.3 in 2008 to 85.1 in 2016 and men's — from 78.2 to 80.3. Remaining life expectancy at 55 also grew from 28.5 in 2008 to 29.8 in 2016 for both genders (30.9 to 32.1 for women and 26.0 to 27.3 for men in the same years). Additionally, life expectancy varies across regions. In 2016, Madrid, Castilla y León, Navarra and La Rioja had the highest life expectancy at birth of over 83.5 years (INE, 2017) and at age 55 (of 30.2 and above) (INE, 2017).

A change in migration trends has been observed since 2008. In 2016, the migration balance was positive for the first time since 2010, with more immigrations than emigrations (INE, 2018). In 2008, the regions with the highest percentage of foreigners were Balearic Islands (18.5 per cent), Valencia Community (15 per cent), Murcia (14.5 per cent) and Madrid (14.3 per cent), whereas Galicia and Extremadura had the lowest rates (2.7 and 2.9 respectively) (INE, 2008). However, in the same year the migration balance was higher in Madrid (56,835), Catalonia (55,390), Andalusia (48,850) and it decreased, achieving negative values in 2012, with the lower values in Madrid (–50,960), Catalonia (–45,433) and Valencia (–26,672). In 2016, a recovery was observed and Canary Islands (16,983), Catalonia (23,984) and Madrid (17,646) had higher values in the migration balance, whereas, the balance in Castilla-La Mancha and Extremadura remained negative (–539 and –866 respectively) (INE, 2016).

Another migration movement was the interregional migration balance. In 2008, the regions with the highest values were Castilla-La Mancha (12,966), Balearic Islands (3,056) and Galicia (2,690) and those with a negative balance were Madrid (–10,013), Canary Islands (–5,502) and Catalonia (–5,155) (INE, 2009). In 2016, the regions with the highest values were Balearic Islands (5,338) and Madrid (16,870) while those with the lowest values were Andalusia (–10,050), Castilla y León (–7,568) and Castilla-La Mancha (–6,032) (INE, 2016).

1.2. Economic context

The highest nominal GDP per capita in 2007 was observed in Madrid (31,617 euros), followed by the Basque Country (30,259 euros), Navarra (29,451 euros) and Catalonia (28,124 euros). Aragón, Balearic Islands and Rioja exceeded the national average (23,893 euros). Andalusia (18,459 euros), and Extremadura (16,102euros) (INE) were at the other extreme. Regions can also differ in relation to their purchasing power. In 2015, Spanish households had an average annual income of 26,730 euros, with an increase of 2.4 per cent compared with the previous year, according to data from the 2016 Living Conditions Survey. In 2016,[1] the regions remained approximately in the same positions in terms of GDP per capita: Madrid (31,917) followed by the Basque Country (30,568) and Navarra

[1] Provisional estimation provided in 2016, with 2015 as the period of reference.

(28,925) with the highest levels, whereas Andalusia (17,356), Melilla (17,219) and Extremadura (16,111) had the lowest (INE, 2016).

Regarding the economic context, virtually all older people receive financial benefits from the public pension system, either directly or through their spouses (Abellán & Pujol, 2016). The higher pensions correspond to special schemes (mining industry), followed by accidents at work and illnesses and general accidents; the lowest correspond to the former Mandatory Old Age and Disability Insurance. In 2015 the average pension was 886.8 euros per month, with the retirement average pension being over 1,000 euros since 2014. Regional disparities in average pensions persist as a result of different labour trajectories. The regions with the highest pensions are the Basque Country, Asturias and Madrid, followed by Navarra, Catalonia, Aragón and Cantabria. In contrast, the regions with the lowest average pensions are Galicia and Extremadura (Herce, 2015).

Finally, a number of important trends can be observed in the labour market. First, there is a substantial engagement of women into the labour market. The economic activity rate among women in the 1970s was approximately 15 per cent from 30 to 59 years old. In 2011 it peaked at age 30–35 at around 83 per cent and was decreasing with age to reach around 52 per cent at age 55–59 and just below 30 per cent at age 60–64 (Abellán & Ayala, 2012). Despite the increase in the statutory retirement age a significant number of people are retiring before the age of 65 (Abellán & Ayala, 2012). The proportion of those who remain in employment after the retirement age of 65 is still very low, compared to some other European and Organisation for Economic Co-operation and Development (OECD) countries. Thus, only 5.9 per cent of the population aged 65–69 was employed in 2017 (Abellán et al., 2019). The participation in employment decreases progressively from the age of 60, when, depending on the labour life, early retirement can be taken. Regions such as Extremadura or Andalusia had the highest unemployment rates in 2008 and Canary Islands joined this group in 2016, while Navarra, Basque Country or Aragón had the lowest unemployment rate in 2016. Regarding the retirement age, the regions with the lower average actual retirement age in 2013 were Murcia (61.5), Canary Islands and Castilla y León (61.8), or Andalusia (61.9), while Navarra (63.5) or Balearic Islands (63.4) were those with the higher average age, even though the statutory retirement age in 2013 was over 65, with a transition to progressive adaptation to 67 years to be achieved in 2027. However, the regions with shorter labour lives were Canary Islands (29.5), Galicia (31.0) and Balearic Islands (31.9) whereas those with longer lives were Navarra (37.2), the Basque Country (36.5), Catalonia (36.3) and Aragon (36.0) (Herce, 2015).

1.3. Regional competences

The Spanish Constitution lists the potential powers and competences of the Autonomous Communities in terms of education, health care system, culture and language, heritage, social services, land use and urban planning, environmental protection, public transport, agriculture, and so on. The competences transferred to the autonomies are specified in the corresponding statutes of autonomy within the framework of constitutional provisions and they may vary considerably. For instance, the Basque Country and Navarra have more extensive fiscal power and autonomy, while the basic services of the autonomous cities of Ceuta and Melilla are generally provided by the central Government. Certain regions or autonomous communities have their own and co-official languages, namely Catalonia, Valencia, the Balearic Islands, the Basque Country, Navarra and Galicia.

The autonomous communities have certain political and financial autonomy. They can approve laws in the matters recognised by their statutes, as well as carry out executive tasks assigned to them. In some areas the autonomous communities have legislative and executive powers. In a strict sense, they have four types of powers that enable them to carry out the following actions: exclusive legislative and

executive powers (e.g., social services); powers for the development of basic state legislation, as well as for the implementation of this legislation (this is the case of education, health care or public health among others); powers for the implementation of legislation approved exclusively by the State (especially in the case of employment and professional training); and legislative and executive powers, in certain areas are virtually equal to the State's to enable both administrative levels to carry out the same actions and initiatives (special case of culture).

1.3.1. Social services

Social services are a legislative and executive competence of the autonomous communities and, normally, policies and programmes aimed at older people are designed and implemented at this level. Social assistance is considered as a matter of competence for the autonomous regions in Article 148.1. 20º EC. Social services, in turn, are divided into two levels. The first level is the general social services, community services or primary care services for the entire population, which is managed through local corporations. The second level is specialised social services, which are aimed at specific population groups (older people, children, youth, etc.) and are related to the users' personal needs and group characteristics (for instance, adult day centres, residences, etc.). The management competence of this second level corresponds to the autonomous and local administration. These services are usually reflected in the catalogues and portfolios of benefits and services of each autonomous community.

The current situation of social services in Spain is characterised by a pronounced heterogeneity between autonomous communities. The disparities refer, in the first place, to the funds that regional and local governments have allocated to social services. The greatest differences among them lie in the different economic distributions. The Basque Country allocates more than double the investment per inhabitant per year in social services than, for example, Murcia. The percentage of regional GDP that Extremadura allocates to social services is 2.5 times higher than that allocated by the Community of Madrid. In Asturias 11.4 per cent of the budget is allocated to social services, while in Valencia it is 8 per cent. These differences can also be observed in the effective coverage of benefits and services to citizens. For example, in Navarra there is one professional in basic social services, community or primary care for every 890 inhabitants, while in the Community of Madrid this ratio is multiplied by 10. In Castilla y León 13.6 per cent of its potentially dependent population (the population aged 65 and above and people with disabilities) receive care from the system of Care for Dependency, and only 1.6 per cent of those who have a recognised right to receive care are still waiting for it. In the Canary Islands only 5.4 per cent receive these services and 29.3 are on the waiting list. In this sense, the autonomous communities with the best overall rating in social services are the Basque Country and Navarra, followed by Castilla y León, Rioja and Catalonia. The Community of Madrid, the Valencian Community, Murcia, the Canary Islands and Andalusia have the lowest ratings (García et al., 2018).

1.3.2. Sanitary services

The Spanish National Health System (SNS) was configured in the General Health Law of 1986 as the set of health services of the autonomous communities, which are coordinated and harmonised by the Interterritorial Council of the Spanish National Health Service (CISNS). This decentralised model of health system was a response to the new territorial organisation of the state, defined by Part VIII of the constitution. Since then there have been profound changes in the system that culminated in 2002 with the total decentralisation of competences in health matters to the autonomous communities. It aims to bring the management of health services closer to the citizens and the organ of interregional cohesion is the CISNS, an organism that must guarantee the principles of equality throughout the Spanish state in matters of health services, health professionals, pharmacy, health research, information systems,

quality of the health system, comprehensive plans, joint actions in public health and the participation of citizens and professionals.

Since the enactment of the Law of Cohesion and Quality of the SNS and the Law on the Regulation of Fiscal Measures, health competencies have been totally decentralised from the State to the autonomous communities. This decentralisation refers to the regulation of primary care, specialised care and public health. Each region has the capacity to distribute and organise health and social-sanitary resources (Law 21/2001 of 27 December) and to organise the aforementioned resources and management models according to its own criteria. Health care is received in the form of benefits listed in a catalogue and under equal conditions for all citizens, which all the communities need to meet. Additionally, the communities can also use their powers to increase the portfolio of services, following discussion and approval in the CISNS (Macia & Moncho, 2007).

There is also significant diversity in the allocation of health resources among the different autonomous communities. The communities with the highest rating in health services are Navarra, the Basque Country, Aragon and Castilla y León. Asturias, Castilla-La Mancha, Extremadura, Rioja and Madrid have average allocations for health services, whereas Balearic Islands, Galicia, Andalusia, Cantabria and Murcia have deficient health services. Those with the lowest rated health services are Catalonia, Valencia and the Canary Islands (Federación de Asociaciones para la Defensa de la Sanidad Pública [FADSP], 2018). The parameters used to assess the regional health systems include indicators of financing, resources and functioning; pharmaceutical policy; the assessment by citizens; waiting lists and indicators on the degree of health privatisation.

1.3.3. Employment

The State has exclusive competence over labour legislation, but active employment policies are also transferred to the autonomous communities, except in Ceuta and Melilla, which are managed by the State Public Employment Service (Servicio Público de Empleo Estatal (SEPE)). One of the most recent state actions in this area is the Spanish Strategy for Employment Activation 2017–2020, which was approved by Royal Decree 1032/2017 on 15 December (Official State Bulletin [Boletín Oficial del Estado, BOE], 16 December). This strategy is aimed at finding solutions for the high number of people seeking employment, which is perceived as an important instrument of social inclusion. Additionally, the activation and integration of the long-term unemployed and those over 55 years of age are considered a priority.

The Annual Employment Policy Plan (PAPE) contains services (actions) and programmes (measures) of active employment policies that the autonomous communities intend to carry out. It represents the consolidation of the new model of active policies approved on the principles of evaluation and results orientation. Agreed unanimously with all the autonomous communities within the framework of the Sectoral Conference on Employment and Labour Affairs, it contains the activation policies for employment that both the autonomous public employment services and the state public employment service plan to carry out in their respective spheres of competence. The plan sets five strategic objectives: the employability of young people; favouring the employability of other groups especially affected by unemployment, especially those aged 45 and above; improving the quality of vocational training for employment; strengthening the link between active and passive employment policies and promoting entrepreneurship.

In order to evaluate the degree of fulfilment of the objectives, the 2015 plan incorporated a system of indicators, drawn up on the basis of the active participation of the autonomous communities. A ranking was established based on the application of a set of indicators to assess how the objectives are achieved. In 2015, the Canary Islands, the Balearic Islands and Navarra were at the top of the ranking,

followed by Aragon, Asturias, Catalonia and the Basque Country. On the other hand, Castilla-La Mancha, Andalusia, Valencia, Galicia and Murcia were ranked lower. In the specific indicator that measures improvement in the employability of groups especially affected by unemployment, such as the long-term unemployed or those aged 55 and above, Aragon, the Balearic Islands, Navarra and Galicia had a higher percentage of response to the employment demands of this group in comparison with the rest. They were followed by Extremadura, the Basque Country, Castilla-La Mancha and Rioja. At the end of the list were the Asturias, Andalusia, Catalonia, Cantabria and the Canary Islands (CCOO, 2015).

Finally, in Spain there is an active retirement formula for keeping people in the labour market once they reach the statutory retirement age. People can continue working either full-time or part-time and, therefore, receiving income from the social security retirement pension and from work. From 17 March 2013 the Royal Decree-Law 5/2013 of 15 March introduced a new type (or role model) of an active pensioner, within a programme of measures to favour the continuity of the working life of those workers who have access to retirement. This new modality makes it possible to combine the contributory retirement benefit and the performance of any work, whether self-employed or employed, whether full-time or part-time, provided that certain requirements are met. The amount of the pension during the period of active retirement is equivalent to 50 per cent of its amount, except self-employed workers with at least one dependent worker, who can reconcile the activity with 100 per cent of their pension. According to the Economic-Financial Report to the 2018 Social Security Budgets, there were 48,264 people in an active retirement situation, of whom 40,794 were self-employed (84.5 per cent of the total) and 7,470 were employees belonging to other social security schemes. These schemes are not well known to the population in general, although this type of action has recently been promoted.

2. Methodology

2.1. Data sources

In this pilot study, the principles which have guided the selection of the indicators and surveys in the original EU-AAI (Zaidi et al., 2013) have been followed in order to maintain the objective of the AAI.

The first principle is related to sustainability. Secondary data have, therefore, been used in the calculations of the AAI of the regions. Specifically, mainly national statistical operations have been selected to calculate the AAI. Those that are conducted repeatedly, with a stable frequency, have been chosen in order to allow for the calculation for different years and a comparability over time. The AAI can, therefore, be calculated for specific and different years in the future by using the microdata from national surveys.

The second principle, related to comparability, has been followed in order to analyse data by regions, gender and time points. The selection of national surveys, which provide data for the regions as well as disaggregated by sex, allows for comparability in those terms. However, due to the characteristics of some surveys and certain variations of the questionnaires used in the different waves, comparability over time points in specific indicators needs to be carefully considered. This is the case of the indicator 3.1 on physical exercise.

Additionally, the principle of objectivity has been respected by maintaining the indicators and the weights selected by the experts for the original EU-AAI.

In addition to these principles, the selection of the surveys and data was guided by relevant criteria. Data sources were selected when they provide information with similar and adequate questions and

categories of response to create the indicators as specified in the original EU-AAI. Other key criteria were a stable replicability of the survey and indicators, taking into account when they have sample sizes large enough to allow for disaggregation by region, age ranges and sex. In the following table, the data sources selected are presented.

Table 1: Surveys used in the pilot study

Domains and indicators	Selected surveys		
Domain 1: Employment	2008	2012	2016
1.1 Employment rate 55-59	EPA 2008	EPA 2012	EPA 2016
1.2 Employment rate 60-64	EPA 2008	EPA 2012	EPA 2016
1.3 Employment rate 65-69	EPA 2008	EPA 2012	EPA 2016
1.4 Employment rate 70-74	EPA 2008	EPA 2012	EPA 2016
Domain 2: Participation in society			
2.1 Voluntary activities	ECV 2006	ECV SP 2015	ECV SP 2015
2.2 Care to children, grandchildren	Study of Older People 2010*	Study of Older People 2010*	Study of Older People 2010*
2.3 Care to infirm and disabled	Study of Older People 2010*	Study of Older People 2010*	ENS 2017
2.4 Political participation	ECV 2006	ECV SP 2015	ECV SP 2015
Domain 3: Independent living			
3.1 Physical exercise	ENS 2006	ENS 2012	ENS 2017
3.2 No unmet needs of health and dental care	ECV 2008	ECV 2012	ECV 2016
3.3 Independent living arrangements	ECV 2008	ECV 2012	ECV 2016
3.4 Relative median income	ECV 2008	ECV 2012	ECV 2016
3.5 No poverty risk	ECV 2008	ECV 2012	ECV 2016
3.6 No severe material deprivation	ECV 2008	ECV 2012	ECV 2016
3.7 Physical safety	ECV 2008	ECV 2012	ECV 2016
3.8 Lifelong learning	EPA 2008	EPA 2012	EPA 2016
Domain 4: Capacity for active ageing			
4.1 RLE achievement of 50 years at age 55	Mortality data 2008	Mortality data 2012	Mortality data 2016
4.2 Share of healthy life years in the RLE at age 55	ECV 2008	ECV 2012	ECV 2016
4.3 Mental well-being	ENS 2006	ENS 2012	ENS 2017
4.4 Use of ICT	ICT Survey 2008	ICT Survey 2012	ICT Survey 2016
4.5 Social connectedness	ECV 2006	ECV 2015	ECV 2015
4.6 Educational attainment	ECV 2008	ECV 2012	ECV 2016

**Data from Time Use Survey from the National Statistics Institute would have been more suitable, but they were not provided in time.*

Two types of surveys were selected: those conducted by the National Statistics Institute and another conducted by the Institute of Older People and Social Services (IMSERSO). A short description of the data sources is presented below.

National Statistics Institute (Instituto Nacional de Estadística (INE)):

1. Encuesta de Población Activa (Spanish Labour Force Survey) (EPA)
2. Encuesta de Condiciones de Vida (Spanish Living Conditions Survey) (ECV)
3. Encuesta Nacional de Salud (Spanish National Health Survey) (ENS)
4. Encuesta sobre equipamiento y uso de tecnologías de información y comunicación en los hogares (Survey on equipment and use of information and communication technologies in homes) ICT Survey.

Instituto de Mayores y Servicios Sociales (IMSERSO):

5. Study of Older People 2010 (SOP 2010)

1. Encuesta de Población Activa (Labour Force Survey) (EPA)

The EPA is a continuous and quarterly survey aimed at the population living in households. Its main purpose is to provide quarterly data about the population aged 16 years and older, regarding their participation in the labour market. The initial sample is approximately 65,000 families per quarter, which is equivalent to approximately 160,000 people.

2. Encuesta de Condiciones de Vida (Living Conditions Survey) (ECV)

The ECV has been carried out since 2004. Based on harmonised criteria for all the countries of the European Union, its main objective is to gain a reference source on comparative statistics of income distribution and social exclusion in the European scope. The survey provides the European Commission with first-rate statistics to study poverty and inequality, population needs and the impacts of social and economic policies on households and individuals. Additionally, it allows for a follow-up of the social cohesion within the relevant territories, and, by providing information, can help to design new policies.

The ECV is an annual survey aimed at the population living in households. The reference period is the year preceding the interview and the sample size is around 13,000 homes and 35,000 people.

3. Encuesta Nacional de Salud (National Health Survey) (ENSE)

The ENSE is a survey aimed at the population living in households. Its main purpose is to obtain data on the state of health and its determining factors from the respondents' perspectives. Approximately 37,500 homes distributed in 2,500 census sections were surveyed during the last wave.

This survey is conducted every five years, alternating every two and a half years with the European Health Survey, with which it shares a group of harmonised variables. The National Health Survey (ENSE) is a statistical operation of the Ministry of Health, Consumption and Social Welfare carried out in collaboration with the INE.

4. Encuesta sobre equipamiento y uso de tecnologías de información y comunicación en los hogares (Survey on equipment and use of information and communication technologies in homes) (ICT Survey)

The ICT Survey is aimed at collecting information about the household equipment and use of information and communication technologies by the Spanish population.

It follows the methodological recommendations of the Statistical Office of the European Union (Eurostat), which allows comparisons between Spain and other countries and satisfies the requirements of international organisations. The survey has been carried out annually since 2002. The sample size is around 2,500 census sections, and approximately 25,000 housing units.

5. **Study of Older People**

This Study of Older People was carried by the IMSERSO in 2009–2010. This is another type of study, focusing specifically on older people and it includes a sample with a total of 2,535 telephone interviews using a structured questionnaire of approximately 25 minutes. It is aimed at persons aged 65 years and older, who are residing in households in Spain, except Ceuta and Melilla. The participants were selected through a simple random sampling, from a telephone list.

2.2. Description of regions

This pilot study is carried out at a regional, NUTS-2, level. In Spain, there are 17 NUTS-2 regions, which are called autonomous communities, and two autonomous cities (Ceuta and Melilla). The autonomic administrations are territorial divisions, which have competences to govern each region and make decisions regarding different policy areas. However, the policymaking power and the level of the competences are not the same among regions, for instance, in terms of organising health care system, social policies or pensions (see section 4 for further details).

Additionally, the regions are different in terms of population and population density. In this sense, regions with larger population sizes include, among others, Madrid, Andalusia, and Catalonia; and regions with smaller population sizes are La Rioja, Navarra, Cantabria and the autonomous cities, Ceuta and Melilla, followed by Baleares, Asturias and Extremadura. As expected, these differences in the population sizes were reflected in the sample sizes of the data sources. Thus, for regions with smaller population sizes, provided data were based on a low number of cases. For this reason, data from less-populated regions should be interpreted cautiously.

2.3. Methods of calculation

The methodology of the original EU-AAI was followed as closely as possible for the calculation of the AAI at regional level. As previously discussed, the methodology varied only when questions and response categories were different from the original EU-AAI. In these cases, the most similar indicators were calculated with the available data, aiming to preserve the rationale of each indicator.

Afterwards, the explicit weights proposed by the Expert group on the AAI were applied to obtain both the domain scores and the overall index. Following the original methodology, these steps were conducted both with the total population, but also for men and for women to obtain gender-specific results.

2.3.1. Indicators

The calculation of the indicators followed the description of the original EU-AAI when the surveys, questions and categories of answer were identical and allowed it. When the data were not available, the most similar questions and categories of answer were selected to calculate the indicator.

All the indicators range from 0 to 100. It is necessary to remember that the value of 100 is not a real (or desirable) goal, as it is not possible (or desirable) to achieve in specific indicators.

2.3.2. Domains

In order to obtain the score of each domain, the explicit weights according to the original methodology were applied. Each domain is composed by different indicators, each with a specific weight. The four domain-specific scores were calculated for every year.

2.3.3. Overall index

As set in the original methodology, the overall AAI values were calculated applying weights to the domain-specific scores.

The weights used in this study are specified in Table 2.

Table 2: Weights assigned to individual indicators and domains

Indicators / Domains	Weights assigned to indicators	Weights assigned to domains
1.1 Employment rate 55-59	25%	
1.2 Employment rate 60-64	25%	
1.3 Employment rate 65-69	25%	
1.4 Employment rate 70-74	25%	
Employment domain		**35%**
2.1 Voluntary activities	25%	
2.2 Care to children, grandchildren	25%	
2.2 Care to infirm and disabled	30%	
2.4 Political participation	20%	
Participation in society		**35%**
3.1 Physical exercise	10%	
3.2 Access to health and dental care	20%	
3.3 Independent living	20%	
3.4 Relative median income	10%	
3.5 No poverty risk	10%	
3.6 No material deprivation	10%	
3.7 Physical safety	10%	
3.8 Lifelong learning	10%	
Independent, healthy and secure living		**10%**
4.1 Remaining life expectancy of 50 at 55	33%	
4.2 Share of healthy life expectancy at 55	23%	
4.3 Mental well-being	17%	
4.4 Use of ICT	7%	
4.5 Social connectedness	13%	
4.6 Educational attainment	7%	
Capacity and enabling environment for active ageing		**20%**

2.4. Limitations

In this section, the limitations of this pilot study are described. Understanding these limitations aids cautious interpretation of the results.

2.4.1. Sample size

The first limitation is related to the sample size used for the calculation of the indicators by regions. In this sense, low number of respondents (under 400) in smaller regions such as La Rioja, Murcia, Extremadura, Cantabria or the autonomous cities, Ceuta and Melilla, hindered the extraction of some indicators for those territories.

Even though the pilot study provides data for all the regions, in order to ensure quality of the data, some regions needed to be aggregated for those indicators where the number of respondents was too small. That is the reason why the indicators for Ceuta and Melilla were calculated using data aggregating both autonomous cities, being aware of their different reality. Additionally, the National Statistics Institute provided the data for the indicator 1.3 employment rate for the age group 65–69 aggregating Aragon, Asturias, Balearic Islands, Cantabria, Castilla-La Mancha, Extremadura, Murcia, Navarra, the Basque Country, Rioja and Ceuta and Melilla. Only national-level data were provided for the indicator 1.4, without disaggregation by regions. The data provided for the indicator 3.8 lifelong learning were aggregated for Cantabria, La Rioja, Ceuta and Melilla.

Finally, following statistical recommendations, the national average was used for the regions with a sample size lower than 150 respondents, for the indicators 2.2 and 2.3 based on the data from the Study of Older People Survey. Thus, national data were used for Aragon, Asturias, Balearic Islands, Canary Islands, Cantabria, Extremadura, Murcia, Navarra, Rioja and Ceuta and Melilla. Otherwise, the standard error with minimal sample sizes would have been too high and would have affected reliability.

2.4.2. Comparability among regions

The comparability among regions is related to their sample size. As for selected indicators data have been provided in aggregated groups for certain regions, it restricts the comparability among them. As outlined above, this is the case for the indicators 1.3 and 1.4 on employment rate at age 65–69 and 70–74, the indicator 2.2 and 2.3 for caring for children and grandchildren and for the infirm and people with disabilities, and the indicator 3.8 for lifelong learning. It is also the case for the division by sex in the indicators 1.3 and 1.4 of employment rate at age 65–69 and 70–74 and the indicator 3.8 for lifelong learning.

2.4.3. Differences from the original variables

Since the selected data sources, which provide disaggregated data at NUTS-2 level and meet the other criteria described above, do not collect data for all the variables as per the original AAI, alternative indicators were constructed, following, as far as possible, the EU-AAI definitions. Thus, some indicators were not identical to the original EU-AAI indicators, as occurred in other subnational calculations. In order to facilitate the interpretation of the data, the calculation of the AAI for Spain was also undertaken and is presented here.

All the indicators and options of answer used are described in the Annex, but the most relevant differences with the EU-AAI are described below. Some of the differences are related to the changes in the questions included in the different waves of the surveys or to the lack of comparable and replicable questions in national surveys. This is the case for the indicators used in this pilot study to measure voluntary activities (2.1), political participation (2.4), caring for children and grandchildren (2.2) and caring for the infirm and people with disabilities (2.3), which are different from the original

EU-AAI. Indicators 2.2 and 2.3 were calculated for people aged 65 and above because data from another possible source (Time Use Survey) were not received in time and the available survey only included people 65 and over. Additionally, the weekly frequency was not included in the indicators 2.2 and 2.3 from the Study of Older People, so the results could be higher than the ones obtained using the EU-AAI definitions.

Additionally, another indicator that deviates from the original EU-AAI is physical exercise (3.1), which also changes between waves of the survey used for this pilot study. Thus, different questions to construct the indicator for 2008 and for 2012 / 2016 were used, as they were formulated differently in the respective waves of the ENS. This may be hampering the comparability through time, therefore, the results should be interpreted with caution.

Finally, physical safety (3.7) was measured by using a general question about whether the household have problems with crime or vandalism in the neighbourhood, rather than about respondents' feeling safe to walk after dark in their local area. The results obtained were higher than the ones obtained with the EU-AAI definition. Moreover, it appears, that using a general question about vandalism in the local area, instead of a question on subjective feelings of safety, noticeably narrows the gender gap. This indicator has not changed throughout the waves selected, which allows for comparability over time.

2.4.4. Reliability

The reliability of the data used in this pilot study might be reduced due to the small sample sizes in specific indicators, especially those with more restricted ranges of ages. For this reason, some aggregation of regions has been carried out in order to maintain an adequate reliability for the data. Criteria from the National Statistics Institute and from the statistical experts consulted have been followed regarding the aggregation of the regions.

2.4.5. Time coverage

The initial intention was to select surveys from the same year for the calculation of the AAI. However, the time coverage and periodicity of some surveys made this difficult. Therefore, the surveys selected for the calculation of the AAI were not, in every case, conducted in the same year. For instance, the calculation of the AAI 2008 included data from 2006 from the National Health Survey and the Life Conditions Survey for two social participation indicators. Furthermore, certain indicators were calculated only for one year (such as the 2.2 care for children and grandchildren) or for two years (2.1 voluntary activities, 2.3 care for the infirm and disabled, 2.4 political participation and 4.5 social connectedness).

3. Results

In this section, results are provided for the different years for the overall AAI and its domains, as it is important to observe that the regions with relatively high results in one domain may have lower results in others. In addition, the gender gap is analysed for each year. Finally, an analysis of the trends between 2008 and 2016 is provided.

3.1. AAI 2008

3.1.1. Overall Active Ageing Index

The results of the AAI 2008 at regional level are presented in Table 3. Catalonia achieved the top position in the ranking of the overall AAI, followed closely by Rioja, the Basque Country and,

Madrid. With the exception of Madrid, the high-ranking regions were north-eastern regions. Extremadura, Galicia and Andalusia had the lowest scores, with indices below 30 points. Eight regions obtained scores in the overall AAI 2008 below the average (32.0). Those obtaining lower values were mostly southern regions, except for two northern ones: Galicia and Asturias.

Those with the higher scores in overall AAI 2008 did not obtain values over 35 points, which means that they are behind the AAI goal calculated for 2008 (41.5). This goal was obtained by calculating the AAI with the maximum value achieved during this period for each indicator and it represents an ambitious but realistic benchmark. One third of the potential of active ageing in the regions with lower scores can be enhanced to reach the goal.

3.1.2. Differences across the four domains

Catalonia, Rioja, Basque Country and Madrid scored high in all the domains, with some exceptions. They all obtained the highest scores in the employment domain, especially in the age group of 55–59. Catalonia had high scores in all the domains except the fourth one, the capacity and enabling environment for active ageing, where its score was below the Spanish average, and the social connectedness score (4.5) of Catalonia was one of the lowest. A similar situation was observed in the Basque Country and Madrid, with high scores in general but lower ones in one other domain, employment and independent living, respectively. In the case of Rioja, the values were more instable and its position in the table varied considerably across domains. Its highest scores were reached in social participation, particularly in volunteering activities and political participation, while lower and medium values were observed in independent living and capacity for active ageing, with the lowest values in physical activities or the access to health care (3.2). However, this variety may be related to its smaller sample sizes.

In the regions with overall AAI values below the average, some diversity was observed. These regions include Valencia, Castilla-La Mancha, Canary Islands, Asturias, Murcia, Ceuta and Melilla, Extremadura, Galicia and Andalusia. Most of these regions scored low in employment and participation in society domains but some of them also had lower values in the fourth domain related to the capacity for active ageing, for example, Murcia, Ceuta and Melilla, Canary Islands, Galicia or Andalusia. Andalusia, Asturias and Extremadura had low values in employment rate before the retirement age. An interesting point was the situation for some of those regions, namely Murcia, Extremadura or Andalusia, in the independent living domain, where their scores were in the top half of the ranking. They all had high scores in financial security indicators (3.4–3.6). Nevertheless, their high values seem to be more related to the lower median income of the younger population than to a high level of income among older persons. Regarding Castilla-La Mancha, even though it has had relatively low values across the domains, its values in the second domain, with high voluntary activities improved its position. Valencia has had low values across the domains except for employment; whereas, Canary Islands had lower results in this domain but higher ones in independent living.

Finally, the commonality of the middle position regions was the fact that the lower results in the first domain were compensated by the higher values in the others, and vice versa. Cantabria had lower results in the employment domain but higher ones in independent living or the capacity for active ageing, respectively. Furthermore, Navarra remained in a quite stable position across the domains, while Balearic Islands have had low values across the domains except for employment. Aragon reached a relatively high value in the overall index. It had high scores in employment and capacity domains, even though the value of independent living is one of the lowest, which is the result of the lower scores in access to health and dental care, independent living arrangements, relative median income and no poverty risk indicators. Finally, Castilla y León obtained stable medium values in the

two first domains, while in the third and fourth it had below average and high positions respectively, which were related to the low value in the access to health and dental care and relative median income, and the high positions in the life expectancy-related indicators as well as the mental well-being indicators.

Table 3: Ranking of 18 regions at NUTS-2 based on the overall Active Ageing Index 2008 and its domain-specific scores

	Overall		Employment		Participation in society		Independent living		Capacity for active ageing	
1	Catalonia	34.6	Catalonia	28.7	Rioja	20.0	Catalonia	69.8	Cantabria	60.8
2	Rioja	34.2	Balearic I.	28.1	Catalonia	18.4	Basque Country	69.3	Basque Country	60.3
3	Basque Country	33.8	Madrid	27.2	Basque Country	17.5	Canary I.	69.0	Aragon	58.5
4	Madrid	33.7	Aragon	27.1	Navarra	17.1	Murcia	69.0	Castilla y León	58.2
5	Aragon	33.4	Rioja	26.1	Madrid	17.0	Navarra	68.9	Madrid	58.1
6	Navarra	33.3	Navarra	25.7	Canary I.	16.7	Extremadura	68.7	Navarra	57.1
7	Cantabria	33.3	Valencia	25.1	Castilla-La Mancha	16.6	Andalusia	68.6	Rioja	57.0
8	Balearic I.	32.7	Basque Country	24.8	Cantabria	16.4	Cantabria	68.5	Asturias	55.8
9	Castilla y León	32.6	Castilla y León	24.4	Castilla y León	16.3	Asturias	68.0	Catalonia	55.5
10	Valencia	31.9	Galicia	24.4	Aragon	16.1	Valencia	67.3	Valencia	54.8
11	Castilla-La Mancha	31.6	Cantabria	24.3	Asturias	15.7	Galicia	67.3	Castilla-La Mancha	54.5
12	Canary I.	31.3	Murcia	24.0	Balearic I.	15.5	Castilla y León	67.3	Balearic I.	54.2
13	Asturias	31.1	Castilla-La Mancha	23.3	Valencia	15.4	Castilla-La Mancha	67.2	Extremadura	53.4
14	Murcia	30.4	Canary I.	23.0	Extremadura	15.1	Rioja	67.0	Andalusia	53.2
15	Extremadura	29.8	Asturias	22.0	Andalusia	14.0	Madrid	66.6	Galicia	53.2
16	Galicia	29.2	Extremadura	19.8	Murcia	13.6	Aragon	65.9	Canary I.	52.5
17	Andalusia	29.1	Andalusia	19.2	Galicia	9.4	Balearic I.	65.2	Murcia	51.9
18	Ceuta and Melilla[2]	30.4	Ceuta and Melilla	24.6	Ceuta and Melilla	14.6	Ceuta and Melilla	66.5	Ceuta and Melilla	50.3
	Spain	**32.0**	**Spain**	**24.6**	**Spain**	**15.7**	**Spain**	**68.0**	**Spain**	**55.6**

[2] Note that Ceuta and Melilla are presented separately throughout the study as they are Autonomous Cities, not regions and because the sample sizes are small, which may affect the reliability of the results and distort the comparability among regions.

3.2. AAI 2012

3.2.1. Overall Active Ageing Index

The results of the AAI 2012 at the regional level are presented in Table 4. In 2012, the Community of Madrid reached the top position in the ranking of the overall AAI, followed by Balearic Islands, Navarra, the Basque Country and Aragon. Nine regions obtained scores in the overall AAI 2012 below the average (32.6). Regarding the bottom of the table, Extremadura, Galicia and Andalusia are, as in 2008, the regions with the lowest scores in the overall AAI, together with Canary Islands. In 2012, only one region had a score under 30 points (compared to three in 2008).

Two of the regions with the highest values are just above the 35 points mark, while another four are close. The top values in 2012 were considerably closer to the goalpost (40.7 points in 2012) than in 2008.

3.2.2. Differences across the four domains

The regions in the top position in 2012 were Madrid, Balearic Islands, Navarra, the Basque Country, Aragon and Catalonia. They achieved high scores across the four domains, with the lower values of three of them observed in the third domain measuring independent living. Those regions share a high employment rate before retirement age, particularly in the age group of 55–59. The Community of Madrid obtained high values in employment, social participation and capacity for active ageing, but its position descended in the third domain, in which the poverty risk showed a low value, and physical exercise, relative median income and physical safety indicators were below Spain's average. A similar situation was noticed in Navarra and the Basque Country, where both had values below the average in the independent living domain. The Basque Country scored high in physical exercise but had the lowest value in the relative median income, poverty risk and physical safety. Navarra reached high values in the access to health and dental care as well as physical safety, but the values of relative median income and the poverty risk were below the average; and physical exercise was the second lowest among the regions. In this sense, these regions have the highest median values of income in age group under 65 and even though both have high pensions (INE, ECV 2012), the value for the relative position of older people compared to the working ages population is lower. Balearic Islands obtained one of the highest values in all the domains, except for the capacity for active ageing, in which it occupied the seventh position. It showed medium values in all the indicators for the fourth domain.

Aragon and Catalonia showed medium-high values across the domains, except for a low score in independent living and just below average score in capacity for active ageing. Low access to health care, independent living arrangements, material deprivation and physical safety, and below average (healthy) life expectancy and second lowest social connectedness contributed to it.

Regarding the regions with low overall AAI values, three of them maintained their position, such as Extremadura, Galicia and Andalusia, whereas Canary Islands and Castilla-La Mancha had a score similar to that of 2008, showing a lack of development in their values. Extremadura and Andalusia achieved the lowest values in employment, especially in the age group of 55–59, but their position across the domains differed. Andalusia also had relatively low values in participation in society, except for care to children and grandchildren, as well as in the fourth domain with values below the average in almost all the indicators, and particularly, in a share of healthy life years, mental well-being and ICT use. At the same time, its medium position in the third domain was related to its high value in the relative median income and the poverty risk indicators. However, Andalusia showed a low median income for population of all ages (data from INE), which means that low income is extended across the life course and, comparatively, pensions of older people are similar to the income received during

their working lives. Despite its low values in employment, participation in society and the capacity for active ageing, Extremadura scored high in the third domain, especially in financial security but also in physical safety, independent living arrangements or the access to health care services. Values for Galicia were similar in the second and fourth domain, meaning that low participation in society and capacity for active ageing were observed, especially in caring for children and grandchildren and for the infirm and people with disabilities, but also in healthy life years, use of ICT and the educational attainment. However, employment was relatively high in 2012, especially in the age groups 55–59 and 60–64. Castilla-La Mancha had low values in the two first domains (except for care for the infirm and people with disabilities), but it was in the top half of the table in independent living and the capacity for active ageing. High values were observed in access to health care, independent living arrangements, no poverty risk, physical safety, and mental well-being, but low values in physical exercise, relative median income, healthy life expectancy, use of ICT and educational attainment. In contrast, Canary Islands showed higher values in the two first domains, but lowest scores in the third and fourth domain. Access to health care, independent living arrangements, no severe material deprivation, healthy life expectancy and social connectedness were the indicators with lower values. Cantabria obtained medium-low values in all the domains, close to the average in employment but lower in participation in society, with low volunteering and political participation values. Additionally, its values in the fourth domain were low, particularly in mental well-being and share of healthy life years.

Finally, the middle position regions were Rioja, Castilla y León, Asturias, Valencia and Murcia. Rioja showed medium-high values across all the domains, whereas, Castilla y León and Asturias scored relatively high in capacity for active ageing domain and medium values in participation in society. However, their values in independent living differed importantly. On the one hand, Asturias demonstrated high scores in access to health and dental care, no poverty risk, physical safety and independent living arrangements, and low in the relative median income, but related to the quite high income of population before retirement age (data from INE). On the other hand, Castilla y León had high values in physical exercise but was lower in all the other indicators, except for lifelong learning. Valencia scored low in employment, especially in age groups around retirement age, but volunteering or political participation had higher values; whereas its value in the third domain was medium. Finally, Murcia obtained low value in the first domain and medium in the second and fourth domains, with low values in healthy life expectancy, the use of ICT and educational attainment. Regarding the independent living domain, physical exercise and relative median income were relatively high, but the access to health and dental care was particularly low. Finally, Ceuta and Melilla had middle values, being below the average in the domains of participation in society and independent living and slightly over average in employment and capacity and enabling environment for active ageing.

Table 4: Ranking of 18 regions at NUTS-2, based on the overall Active Ageing Index 2012 and its domain-specific scores

	Overall		Employment		Participation in society		Independent living		Capacity for active ageing	
1	Madrid	36.1	Madrid	28.5	Catalonia	20.2	Balearic I.	76.1	Basque Country	63.3
2	Balearic I.	35.6	Balearic I.	28.3	Madrid	18.1	Asturias	75.6	Madrid	62.2
3	Navarra	34.7	Aragon	27.3	Basque Country	17.6	Extremadura	75.0	Navarra	62.1
4	Basque Country	34.7	Navarra	26.5	Balearic I.	17.5	Murcia	74.4	Aragon	61.1

	Overall		Employment		Participation in society		Independent living		Capacity for active ageing	
5	Aragon	34.6	Catalonia	25.8	Navarra	16.6	Aragon	74.2	Castilla y León	60.7
6	Catalonia	34.6	Rioja	25.2	Valencia	16.3	Rioja	74.1	Asturias	60.7
7	Rioja	33.6	Basque Country	24.9	Rioja	15.5	Castilla-La Mancha	73.3	Balearic I.	59.9
8	Castilla y León	32.9	Galicia	24.7	Aragon	15.5	Madrid	72.9	Rioja	59.8
9	Asturias	32.7	Castilla y León	24.7	Murcia	15.3	Navarra	72.3	Valencia	59.4
10	Valencia	32.5	Cantabria	24.0	Canary I.	14.9	Valencia	72.0	Castilla-La Mancha	58.1
11	Murcia	31.9	Asturias	22.7	Extremadura	14.7	Cantabria	72.0	Catalonia	57.7
12	Cantabria	31.6	Canary I.	22.4	Asturias	14.4	Andalusia	71.9	Murcia	56.8
13	Castilla-La Mancha	31.6	Valencia	22.2	Castilla y León	14.3	Galicia	71.5	Extremadura	56.6
14	Canary I.	30.5	Murcia	22.2	Castilla-La Mancha	14.3	Basque Country	71.2	Cantabria	56.2
15	Extremadura	30.5	Castilla-La Mancha	21.9	Cantabria	13.7	Castilla y León	71.1	Andalusia	55.5
16	Galicia	30.2	Extremadura	18.6	Andalusia	13.5	Catalonia	69.3	Galicia	54.9
17	Andalusia	29.2	Andalusia	17.8	Galicia	9.9	Canary I.	68.3	Canary I.	53.1
18	Ceuta and Melilla	33.0	Ceuta and Melilla	23.6	Ceuta and Melilla	15.5	Ceuta and Melilla	69.9	Ceuta and Melilla	61.8
	Spain	**32.6**	**Spain**	**23.6**	**Spain**	**15.8**	**Spain**	**72.1**	**Spain**	**57.9**

3.3. AAI 2016

3.3.1. Overall Active Ageing Index

The latest results of the AAI at regional level are presented in Table 5. In this period, Balearic Islands reached the top position in the ranking of the overall AAI, followed closely by Madrid and Rioja, and they were followed by the Basque Country, Navarra, Aragon and Catalonia. Nine regions obtained scores in the overall AAI 2016 below the average (33.4). Regarding the bottom of the table, Murcia, Andalusia and Canary Islands obtained the lowest scores in the overall AAI, together with Galicia. In 2016, none of the regions had a score under 30 points.

The highest values of the overall AAI also passed the 36-point mark, being slightly less close to the goalpost calculated with the maximum values observed during this period (42) for the overall AAI 2016 than in 2012.

3.3.2. Differences across the four domains

Balearic, Madrid, Rioja, the Basque Country and Navarra had the highest scores in the overall AAI in 2016. They obtained middle-high values in the second and fourth domain, whereas in the first and the third domains the positions were more diverse. All of the regions had very high values in employment

rates for 55–59 and 60–64 age groups. Balearic obtained the highest value in employment, showing a good inclusion of older workers in the labour market, but also a high level of participation in society, with a high share of older adults taking part in volunteering, caring for the infirm and people with disabilities and political participation. However, the values of independent living were at the bottom of the ranking, with low values in independent living arrangements, poverty risk and physical safety. Madrid demonstrated high values in participation of older people both through employment and unpaid contributions to society, with the highest value in volunteering. In the third domain Madrid's score was slightly above the average, and in the fourth domain it occupied the fifth position. Poverty risk and physical safety indicators were below the average, reflecting issues that could be addressed through social policies to improve older people's quality of life, but also independent living arrangements were rather low. Regarding Rioja, high values in all domains were achieved, even though participation in society was only slightly above average. The Basque Country and Navarra showed high values in all the domains, especially in the capacity for active ageing, albeit Navarra had a lower employment domain score.

Regarding the regions that achieved low overall AAI values, three of them maintained their position from the calculation for 2012: Canary Islands, Galicia and Andalusia. They were joined by Murcia in 2016. Canary Islands and Andalusia obtained the lowest values in employment, reflecting some difficulties for older workers to be part of the labour market. They also attained low values in capacity for active ageing. Their scores in the indicators for the fourth domain were diverse. Both had low scores regarding life expectancy and healthy life years, use of ICT and social connectedness, but Andalusia scored higher in social connectedness and Canary Islands much higher in mental well-being. Furthermore, both obtained medium values in the unpaid contribution to society for their older population but differed in the third domain. Andalusia obtained better results, especially related to its better access to health and dental care, lower risk of poverty and severe material deprivation and higher level of physical safety. Murcia scored low in the third and fourth domain. Low values in physical activity, access to health care, physical safety as well as healthy life years or mental well-being may require intervention through social policies to improve the health and security of older people in this region. The use of ICT is the lowest and the educational attainment the third lowest among the regions. However, the contribution to society through employment or social participation could also be enhanced. Galicia reached medium values in terms of employment and in the capacity for active ageing, being over the average, with high values in mental well-being and social connectedness, but very low values in participation in society and independent living. Caring and voluntary activities indicators reflected lower levels of participation compared to other regions, so the unpaid contribution to society as it is measured in this domain was too low and may be enhanced through social policies. Other aspects such as the financial security of older people also require interventions to improve their income and, therefore, their active ageing.

The other regions are in the middle position: Aragon, Catalonia and Castilla y León, with scores above the average and Cantabria, Valencia, Asturias, Extremadura, Ceuta and Melilla and Castilla-La Mancha are below the average. Regarding the first group, Aragon scored high across the domains, with good access to health care, low severe material deprivation and physical safety, as well as high values in life expectancy indicators, among others. However, relative median income, no poverty risk or healthy life expectancy scored lower. Catalonia and Castilla y León had similar values in three domains, scoring above the average in the first and third domains, and below average in the fourth domain. Even though both have relatively high values regarding life expectancy and healthy life years, values below the average in mental well-being, use of ITC and social connectedness contributed to a decrease in their positions regarding the enabling environment for active ageing. This could be improved in order to enhance active ageing in both regions. Nonetheless, values in the second domain

differed considerably, with Catalonia being in the first position while Castilla y León was in the third lowest, with low values in most indicators of the domain.

Table 5: Ranking of 18 regions at NUTS-2, based on the overall Active Ageing Index 2016 and its domain-specific scores

	Overall		Employment		Participation in society		Independent living		Capacity for active ageing	
1	Balearic I.	36.2	Balearic I.	30.6	Catalonia	17.3	Navarra	76.0	Basque Country	65.9
2	Madrid	36.1	Rioja	30.4	Madrid	17.3	Rioja	74.6	Cantabria	65.5
3	Rioja	36.1	Aragon	29.3	Balearic I.	17.1	Extremadura	74.6	Rioja	65.3
4	Basque Country	35.9	Castilla y León	29.0	Navarra	15.8	Aragon	74.1	Navarra	64.6
5	Navarra	35.8	Madrid	28.6	Basque Country	15.5	Asturias	73.6	Madrid	64.1
6	Aragon	35.4	Basque Country	28.4	Aragon	14.8	Basque Country	73.4	Aragon	62.9
7	Catalonia	35.4	Catalonia	28.1	Rioja	14.2	Catalonia	72.8	Balearic I.	62.7
8	Castilla y León	33.7	Navarra	27.9	Murcia	13.9	Castilla y León	72.7	Extremadura	62.4
9	Cantabria	33.2	Cantabria	26.7	Valencia	13.4	Madrid	72.4	Galicia	62.2
10	Valencia	33.1	Valencia	26.0	Andalusia	13.2	Valencia	72.3	Asturias	61.4
11	Asturias	32.2	Galicia	25.5	Asturias	12.8	Cantabria	71.7	Catalonia	61.3
12	Extremadura	31.8	Murcia	24.4	Canary I.	12.7	Andalusia	71.4	Castilla y León	60.9
13	Castilla-La Mancha	31.7	Castilla-La Mancha	24.2	Extremadura	12.1	Castilla-La Mancha	70.9	Valencia	60.2
14	Galicia	31.5	Asturias	22.9	Castilla-La Mancha	12.1	Murcia	70.4	Castilla-La Mancha	59.5
15	Murcia	31.3	Extremadura	21.8	Castilla y León	11.6	Balearic I.	69.6	Canary I.	59.1
16	Andalusia	30.6	Canary I.	21.5	Cantabria	10.4	Galicia	68.0	Andalusia	56.7
17	Canary I.	30.4	Andalusia	21.5	Galicia	9.6	Canary I.	65.7	Murcia	54.5
18	Ceuta and Melilla	33.2	Ceuta and Melilla	25.8	Ceuta and Melilla	13.8	Ceuta and Melilla	66.2	Ceuta and Melilla	63.5
	Spain	**33.4**	**Spain**	**25.9**	**Spain**	**14.1**	**Spain**	**72.3**	**Spain**	**60.9**

Regarding the regions with medium-low values, all shared low values in the two first domains, except Valencia, which scored just below the average in the first two domains and Cantabria, and they differed in the third and fourth domains. Nonetheless, the medium-low scoring regions differed in the third and fourth domains. Castilla-La Mancha and Ceuta and Melilla obtained low stable values across the domains, whereas, Extremadura obtained the second highest position in independent living, with highest values in financial security and physical activity, and above average in physical safety and independent living conditions. It had a medium-high position in the capacity for active ageing, with a

life expectancy value below the average, the use of ICT and educational attainment. In order to achieve higher levels of active ageing, participation of older people and enhancing education and new technology use could be increased through social policies. However, in the capacity for active ageing it occupied the second top position and employment values were just above the average. Valencia had values just below the average in employment and participation in society, but lower in capacity for active ageing, even though its value in independent living was average. Finally, Asturias scored lower in the first and second domains, as well as in the capacity for active ageing, whereas its score was above the average in the third domain, with high values in financial security.

3.4. Gender gap

It is known that ageing trajectories and, therefore, active ageing, differ for men and women. This difference relates to the diverse factors that influence men and women across the course of life. The AAI project considered it important to calculate AAI indicators, domain-specific scores and the overall index for both men and women to be able to analyse differences in realisation of the potential of men and women and capacity for active ageing. The gender gap is measured as the difference between the scores for women and for men. Thus, a positive gender gap means that women have higher results and vice versa. In this section, results for men and women and the gender gap are analysed to measure differences and evaluate gender (in)equality in the overall AAI within each region, but also in each of the four domains.

3.4.1. Gender gap - 2008

The results for men and women regarding the overall AAI in 2008 showed lower scores for women in all the regions, with the gender gap in favour of men being more pronounced in regions such as Valencia, Rioja or Castilla-La Mancha, with differences between genders close to 7 points. On the other side, the regions with the lowest gender gaps, though still of around 3.5 points in favour of men, were the Basque Country and Asturias.

Figure 3 shows the gender gap across all domains of the AAI for 2008.[3] The domain with the highest gender gap was employment (–14.6), followed, though not closely, by the capacity for active ageing (–3.1). These results might reflect not only the unequal access to employment and education but also the inequalities in terms of health between men and women.

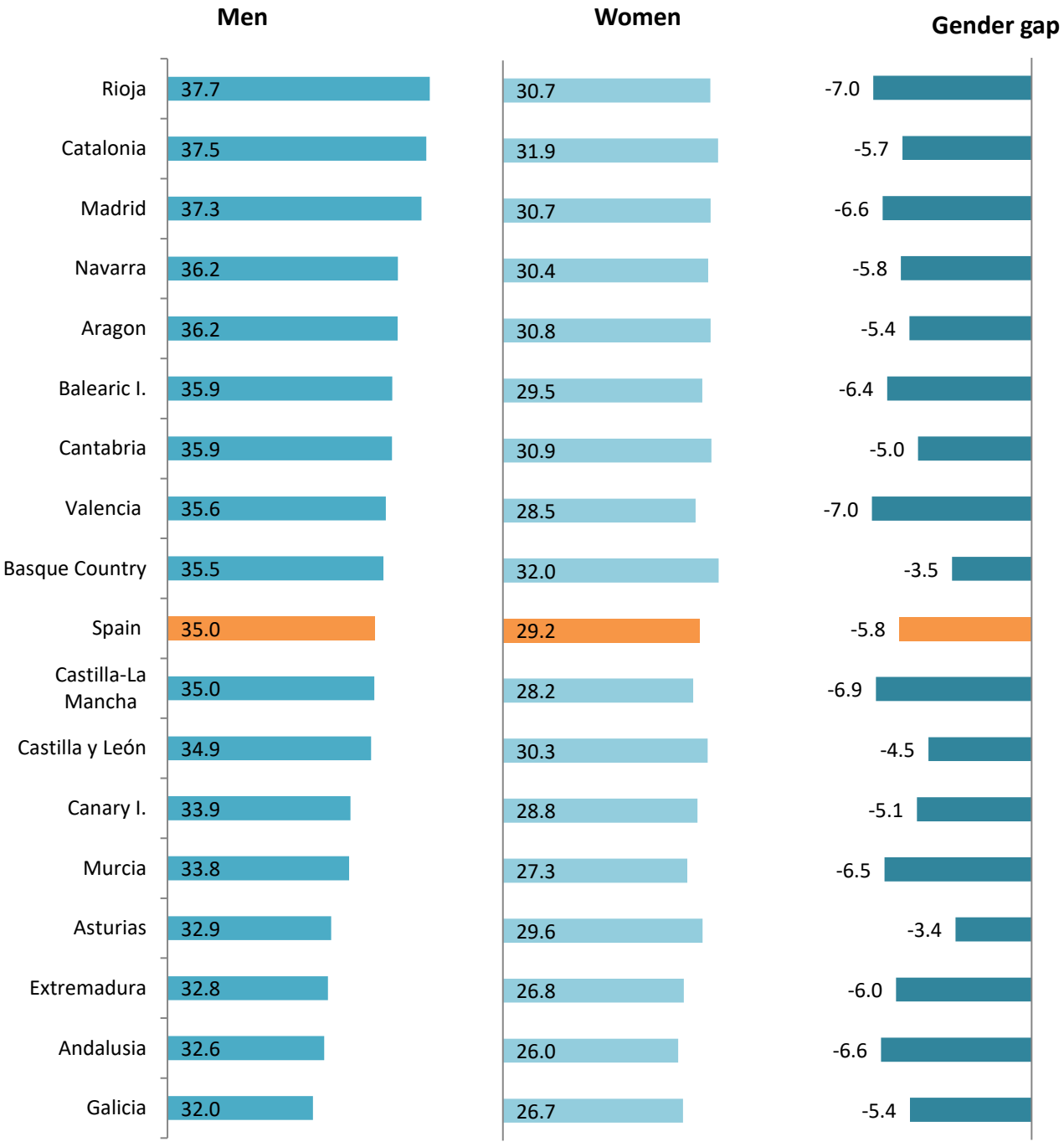
Considering employment, the gender gap in favour of men was the highest, with 10 out of 18 regions achieving a gap of more than –15 points. The differences between men and women were more pronounced in the age group 55–59 than the 60–64 group, except in the Community of Madrid, which had the more marked difference by gender in the 60–64 age group.[4] Even though in Spain the statutory retirement age is the same for men and women, greater extended access for women to employment was produced later than in some other European countries. Additionally, the actual age of leaving the labour market for women tends to be a little higher, because of their shorter labour lives. This is also related to the observed trend of women who tend to provide care more frequently, for example, to the infirm and people with disabilities, and, therefore, they cannot continue to be active in the labour market.

In participation in society, the gender gap was 0.2, slightly in favour of women. Even though women in 10 out of 18 regions obtained higher scores than men, for example, in Aragon, Canary Islands, the

[3] Ceuta and Melilla were excluded from the analysis where the results were presented separately for men and women because of too low sample sizes.
[4] Note that no data for gender differences for the age groups 65–69 and 70–74 were provided and, therefore, they were not included in the analysis.

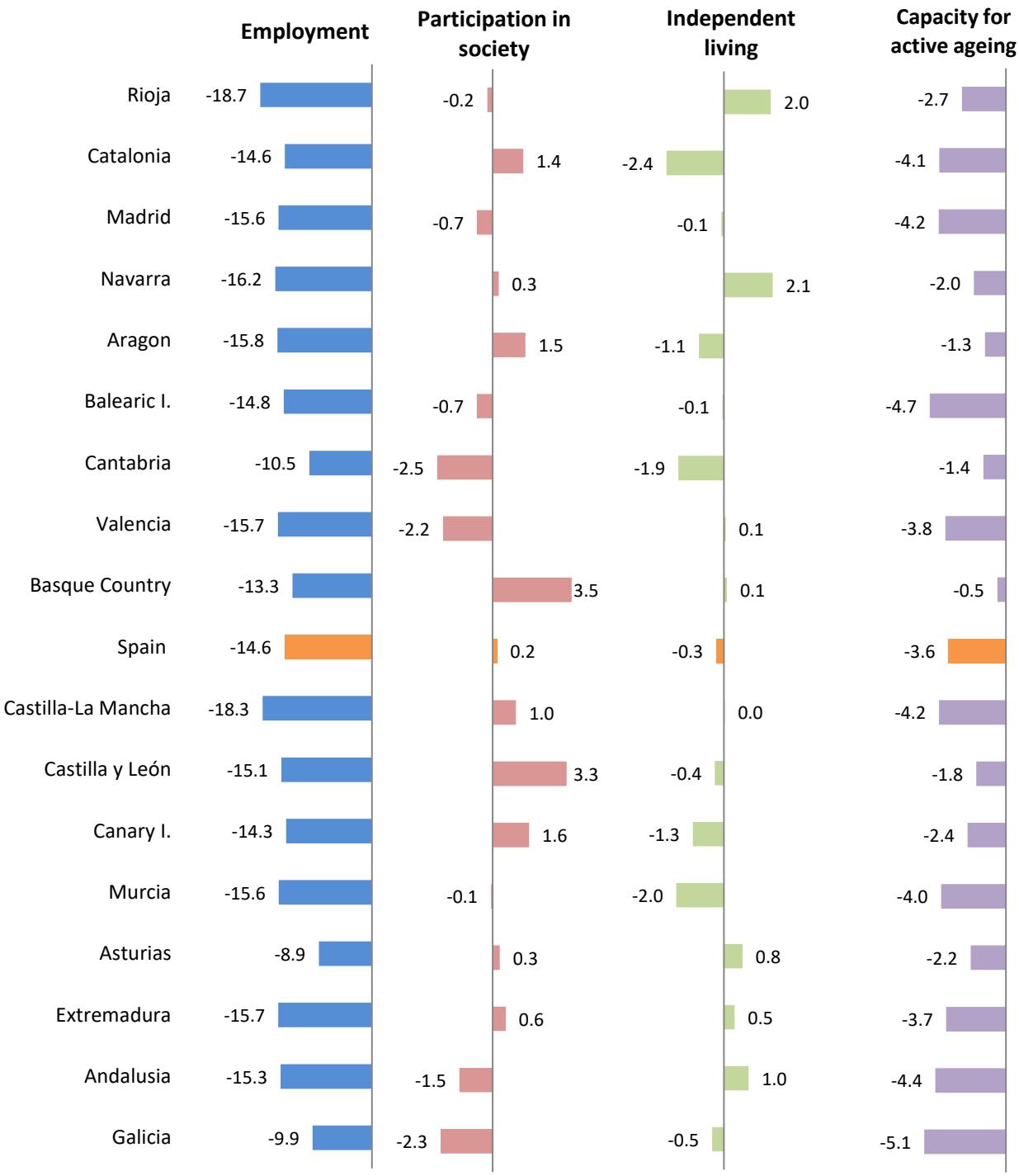
Basque Country or Castilla y León, in Cantabria, Andalusia, Valencia or Galicia men had higher scores. Political participation was a type of social participation in which men engaged more than women in almost all regions (except for Navarra), whereas women were more involved in voluntary activities, especially in the Basque Country and Canary Islands. Regarding caring, the contribution to society related to care of older people was performed more by women, while men were more involved in caring for children or grandchildren in regions such as Catalonia.[5]

Figure 2: Overall AAI 2008 for men, women and the gender gap at NUTS-2



[5] The values of the indicators 2.2 and 2.3 from Study of Older People should be analysed cautiously. At a national level, these indicators are normally higher among women (see for instance the European Quality of Life Survey (EQLS)). Data from the Time Use Survey would be more suitable and were, therefore, requested from the National Statistics Institute, but were not provided in time for this study.

Figure 3: Gender gap by domain, 2008



The gender gap in the third domain was of –0.3 points. Women scored higher than men in some regions, e.g. Andalusia, Navarra or Rioja. In others, the gap was very small, which may indicate more equal living conditions for both genders, such as in the Basque Country, Balearic Islands, Madrid or Castilla-La Mancha.[6] The indicators measuring financial security were those in which more

[6] The small gender gap observed in the third domain might be influenced by the lack of data disaggregated by sex for the indicator lifelong learning. Additionally, the use of a general question on vandalism in the local area instead of a question on subjective feeling of safety for the indicator 3.7 physical safety may have influenced the results.

differences were observed in all regions. However, some regions, such as Galicia, the Basque Country, Navarra, Andalusia or Madrid showed smaller differences between men and women in income-related indicators.

Finally, significant gender differences were observed in the fourth domain, where men scored higher than women across the regions. The only region with the gender gap in favour of men being lower than 1 point was the Basque Country. However, women scored better than men in the indicator 4.1 related to life expectancy in all regions, while men score higher in all the regions in the indicator 4.2 healthy life expectancy and all the other indicators, except for 4.5 social connectedness and use of ICT in Rioja and Extremadura. Regarding the indicator of social connectedness, women obtained higher scores in 12 out of 17 regions, including Catalonia, Madrid, Navarra, Canary Islands or the Basque Country.

3.4.2. Gender gap - 2012

The differences in the scores between men and women in the overall AAI 2012 were also in favour of men in all the regions. However, compared to 2008, the gender gap had narrowed down from the average of –5.8 to –3.2. The maximum value, and the only one below –5 points, was –5.4 points (Valencia). In two regions the gender gap was around –1 point (Asturias and Cantabria).

The gender gap across AAI domains for 2012 can be found in Figure 5. The domains in which more pronounced gender gaps were observed were employment and the capacity for active ageing, but also independent living in certain regions. In this case, in addition to the unequal access to employment and education, disadvantages for women in terms of independence and security are demonstrated.

The differences between men and women were once again the highest in the employment domain, even though a decrease of the gender gap was observed compared to 2008. There were four regions showing a gap in favour of men over 10 points: Canary Islands, Castilla y León, Castilla-La Mancha and Valencia. In 2012, the differences in the gender gap between the age groups 55–59 and 60–64 were smaller than in 2008.[7]

Regarding the second domain, the differences observed between genders were lower than in 2008, even though the indicators 2.2 and 2.3 where the same. In 10 out of 17 regions, women achieved higher values than men, including the Basque Country, Castilla y León and Rioja, whereas in others such as Navarra, Valencia or Galicia, men scored higher. Even though political participation was still a contribution to society more frequent among men than women, it showed a lower gender gap than in 2008. In contrast, women achieved higher levels of voluntary activities; Aragon, Balearic Islands or Rioja were those with the highest gender gap in favour of women in this indicator.

While on average in the third domain the gender gap was moderate (–1.2 points), in several regions men scored significantly higher than women. These were, for example, Aragon, Madrid and Valencia. Galicia, the Basque Country or Cantabria showed lower differences by gender (within 1 point). The higher differences in financial indicators in favour of men were observed in Aragon, Cantabria and Madrid, which reflected the raising inequality in terms of income. Rioja showed a different result — the highest gap in favour of women. Regarding access to health and dental care, women's access to care seemed to be more difficult compared to men in Canary Islands or Valencia.

Finally, the domain of capacity and enabling environment for active ageing also showed gender gaps. In this case, women achieved lower values than men in all the regions, except Asturias and Cantabria.

[7] Note that no data for gender differences for the age groups 65–69 and 70–74 were provided and, therefore, they were not included in the analysis.

Nevertheless, women obtained higher values than men in the remaining life expectancy, the highest differences observed in Asturias, Cantabria, the Basque County, Extremadura and Rioja. Social connectedness was also higher for women in 12 out of 17 regions, while men scored higher than women in the other regions and in the indicators that compose this domain. Additionally, the gender gap decreased in healthy life expectancy, mental well-being and educational attainment, compared to the gender gap in AAI 2008.

Figure 4: Overall AAI 2012 for men, women and the gender gap at NUTS-2

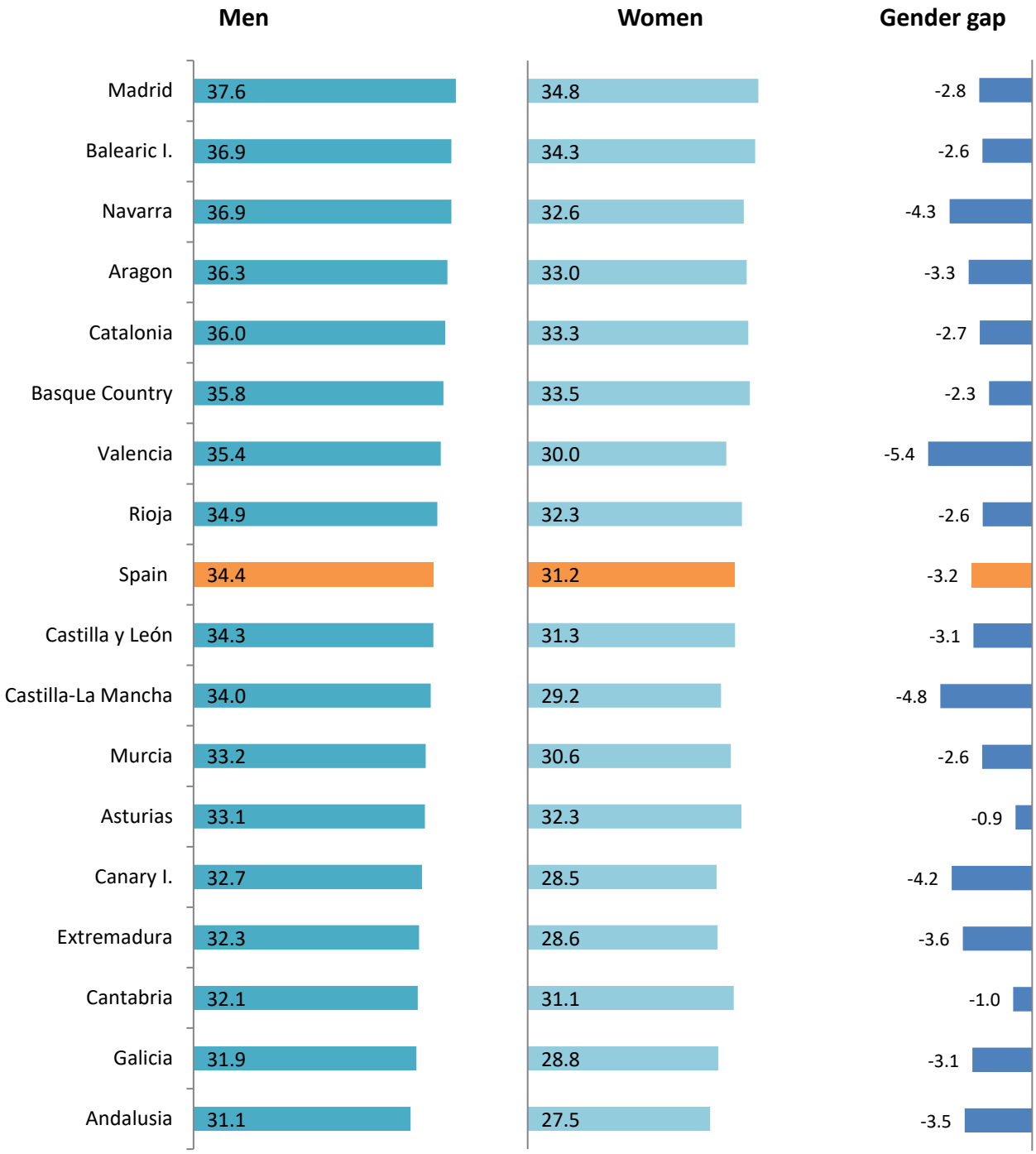
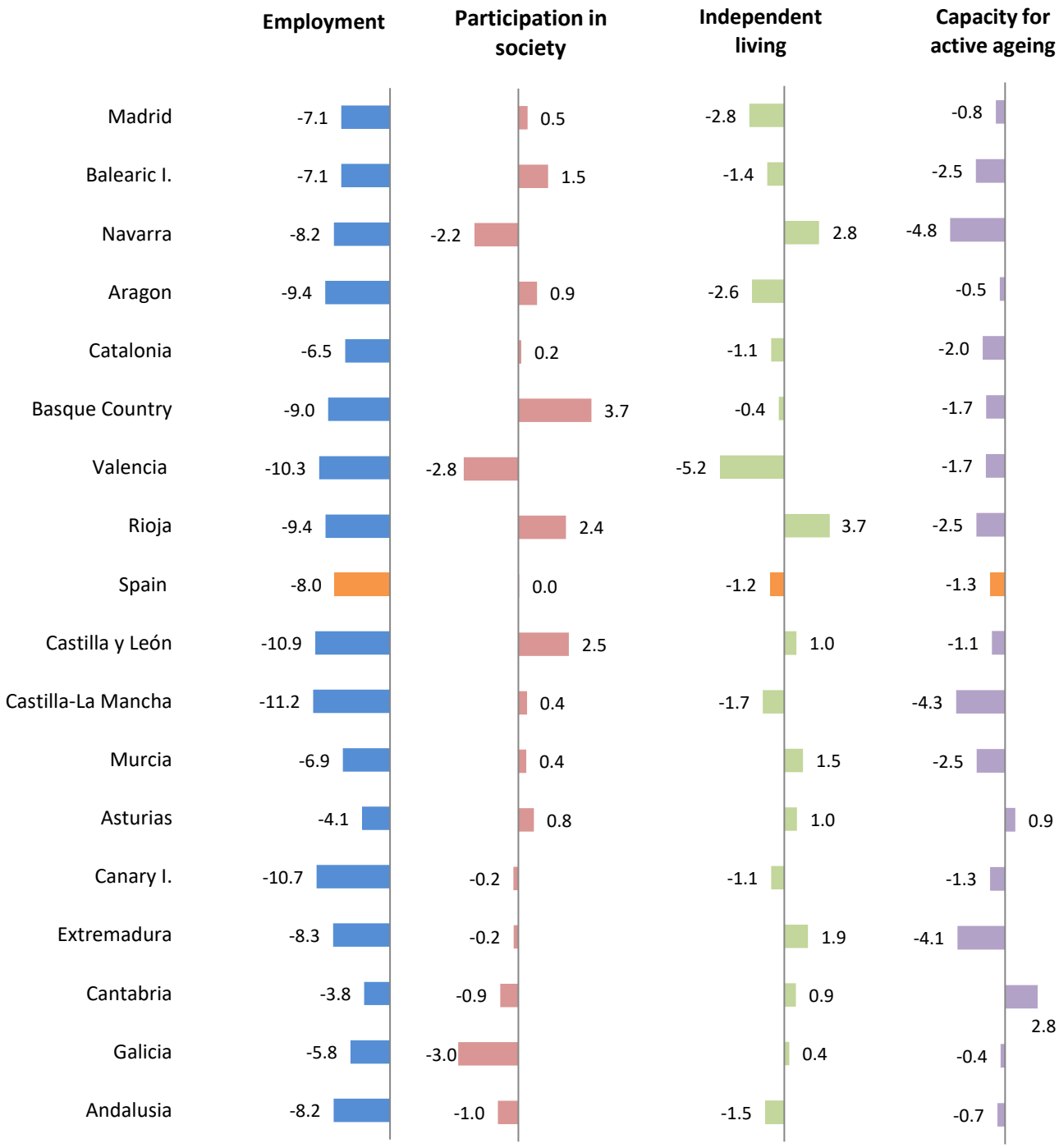


Figure 5: Gender gap by domain, 2012



3.4.3. Gender gap - 2016

In 2016, the gender gap continued to be in favour of men. Murcia had the highest gap of –4.5 points. On the other side, Balearic Islands or Galicia had more similar results for men and women with a gender gap within –1 point. However, the gender gap had decreased since 2008. The drop was more pronounced between 2008 and 2012 than between 2012 and 2016.

Figure 7 shows the differences between male and female domain-specific scores. The gender gap was the highest in employment, followed by the capacity for active ageing, together with independent

living, in which certain regions had high gender gaps. This is related to the unequal access to employment and education as well as to the disadvantages for women regarding independence and security.

Figure 6: Overall AAI 2016 for men, women and the gender gap at NUTS-2

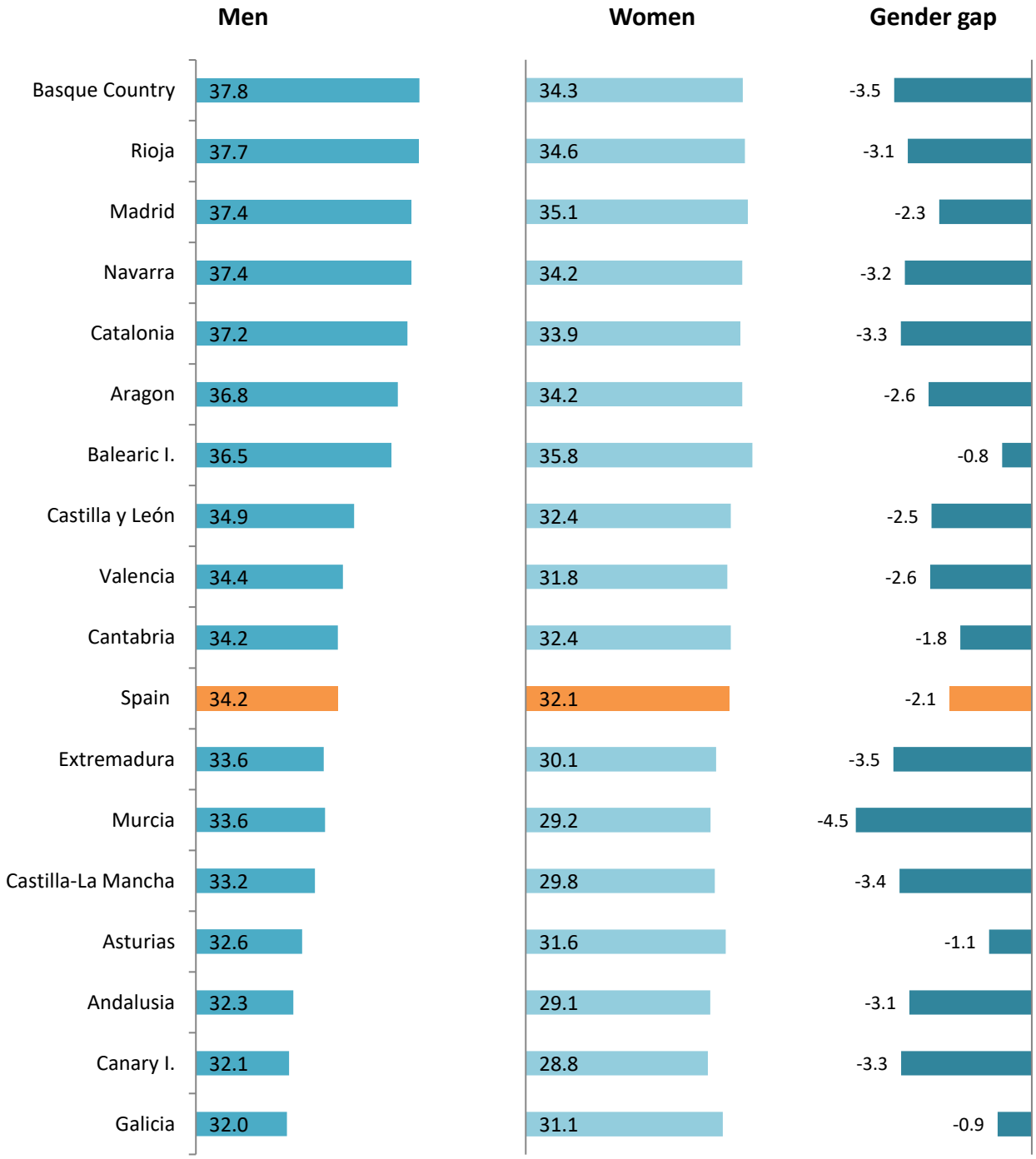
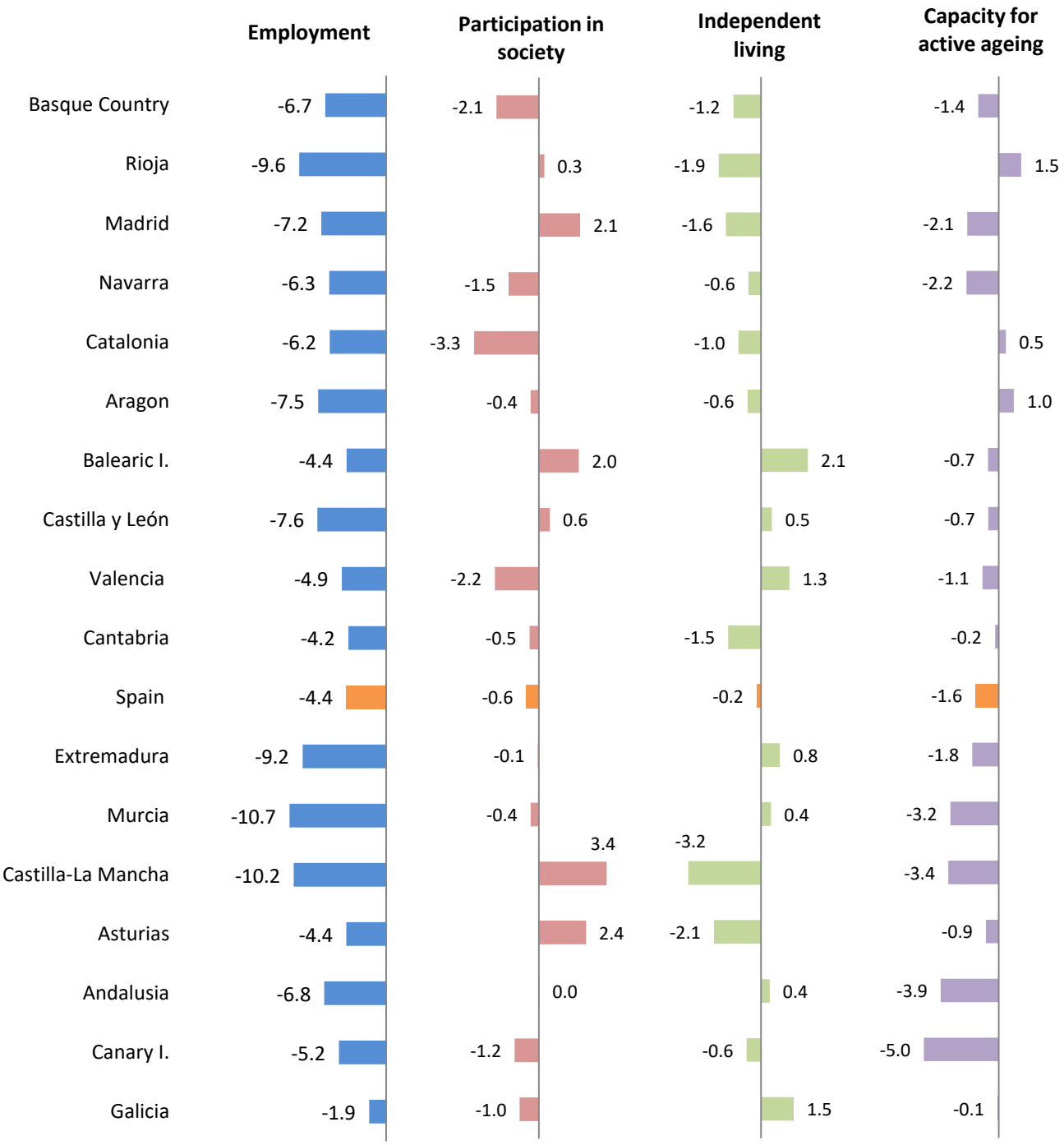


Figure 7: Gender gap by domain, 2016



The gender gap was the highest in the first domain. Murcia and Castilla-La Mancha were the regions with the highest differences by gender (over 10 points), followed closely by Rioja and Extremadura. The lowest, below 2 points, gender gap was observed in Galicia. Regarding the individual indicators, the gender gap was similar in the employment rates of the age groups 55–59 and 60–64.[8]

A different pattern in gender gap was observed in the second domain. The overall gap for the domain was close to 0 (–0.6). Women achieved higher values than men in 7 out of 17 regions, including

[8] Note that no data for gender differences for the age groups 65–69 and 70–74 were provided and, therefore, they were not included in the analysis.

Asturias, Balearic Islands, Castilla-La Mancha and Madrid. Thus, women obtained higher values in both voluntary activities and care for the infirm and people with disabilities, whereas men tended to have higher political participation.

Regarding independent living, while the overall domain gender gap was also close to 0 (–0.2), the situation was more diverse than in the second domain. Older men had higher scores in several regions, such as Castilla-La Mancha, Asturias and Rioja. Castilla y León, Andalusia and Murcia had gender gaps lower than 0.5 points, all in favour of women. Higher scores were observed for men across all the individual indicators, except for independent living arrangements and access to health and dental care, where women had higher scores. Those regions where a noticeably lower level of financial security was observed for women were Asturias, Canary Islands, Catalonia, the Basque Country and Navarra.

In the fourth domain men had higher domain score than women in all regions except Rioja, Catalonia and Aragon. Women obtained higher values in the indicator 4.1 measuring remaining life expectancy, while men in all the other indicators, except for social connectedness where the average gender gap was 0.1. The highest gaps were observed in Canary Islands (–5) and Andalusia (–3.9), and the lowest in Galicia (–0.1) and Cantabria (–0.2).

3.5. Changes in AAI 2008–2016

This section analyses the results of 2008, 2012 and 2016 and the changes of the domains and the overall index throughout this eight-year period. Some issues should be taken into account to interpret better the results obtained:

1) The main issue is related to the limitations of this pilot study, which were detailed in the methodological section regarding the different indicators and the small sample size in some regions. Both factors hamper, in certain terms, the comparison in different points in time, especially with regard to the second domain.

2) The global economic crisis, which affected Europe, and, therefore, Spain, reflected on several indicators of the index. Some indicators measuring employment rates in the different age groups in the first domain and access to health and dental care, independent living, the financial indicators and lifelong learning from the third domain were directly affected by changes in both economic crises and the slight recovery that has been happening in recent years.

3.5.1. Overall Active Ageing Index

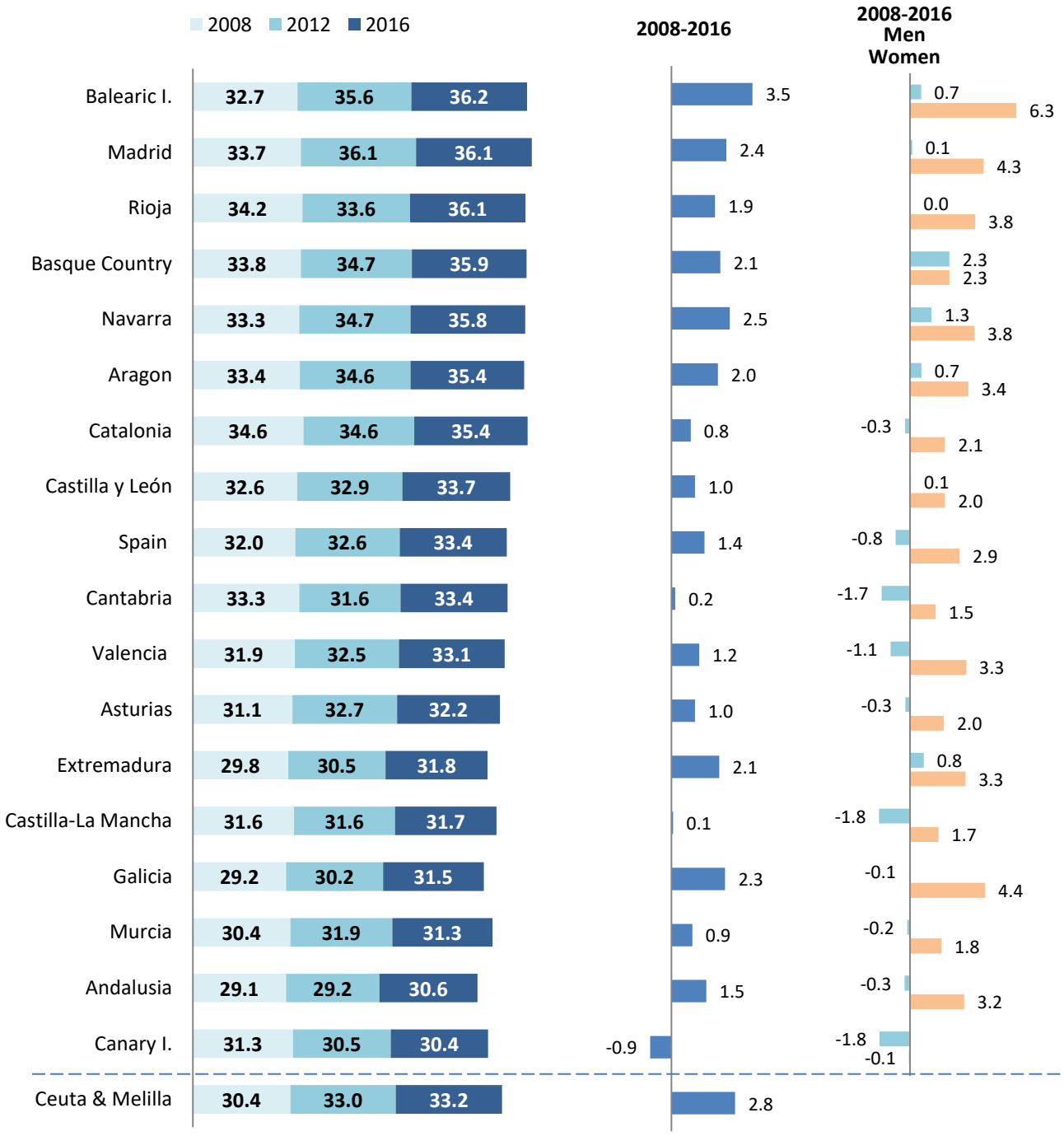
Almost all the regions analysed saw an increase in their overall AAI value during the eight-year period, except Canary Islands, which showed a small decrease and Cantabria together with Castilla-La Mancha, with a slight increase close to 0. However, the evolution differed between the four-year periods.

The position of the regions that have occupied the top half of the ranking since 2008 changed slightly, where Madrid, the Basque Country and Rioja remained in the first positions. The bottom of the table also changed during these years, but Andalusia and Murcia retained their position. During this period, the AAI in eight regions increased by more than 2.0 points (Galicia, Extremadura, Aragon, Navarra, the Basque Country, Madrid, Balearic Islands and Ceuta and Melilla), while in Canary Islands it decreased by 0.9 points.

The AAI in regions such as Madrid, Balearic and Ceuta and Melilla increased during the first four-year period 2008–2012 while in Canary Islands, Cantabria and Rioja it decreased. On the other hand, in regions such as Andalusia, Galicia, Extremadura, Navarra, the Basque Country and Rioja the AAI increased during the second four-year period 2012–2016 by more than 1 point, while in Canary Islands, Murcia and Asturias it decreased slightly.

The changes observed between 2008 and 2016 were more pronounced for women than men in all the regions, except for the Basque Country but also Cantabria, Castilla-La Mancha and Canary Islands.[9] Scores for women in the overall AAI increased in all regions, except for Canary Islands, while men's scores increased in 8 out of 17 regions, and this increase was more than 1 point only in Navarra and the Basque Country. Despite the higher increase in women's scores compared to men, their AAI values were still lower and more efforts should be made in order to achieve equality in active ageing for men and women.

Figure 8: Changes in the overall AAI, between 2008, 2012 and 2016



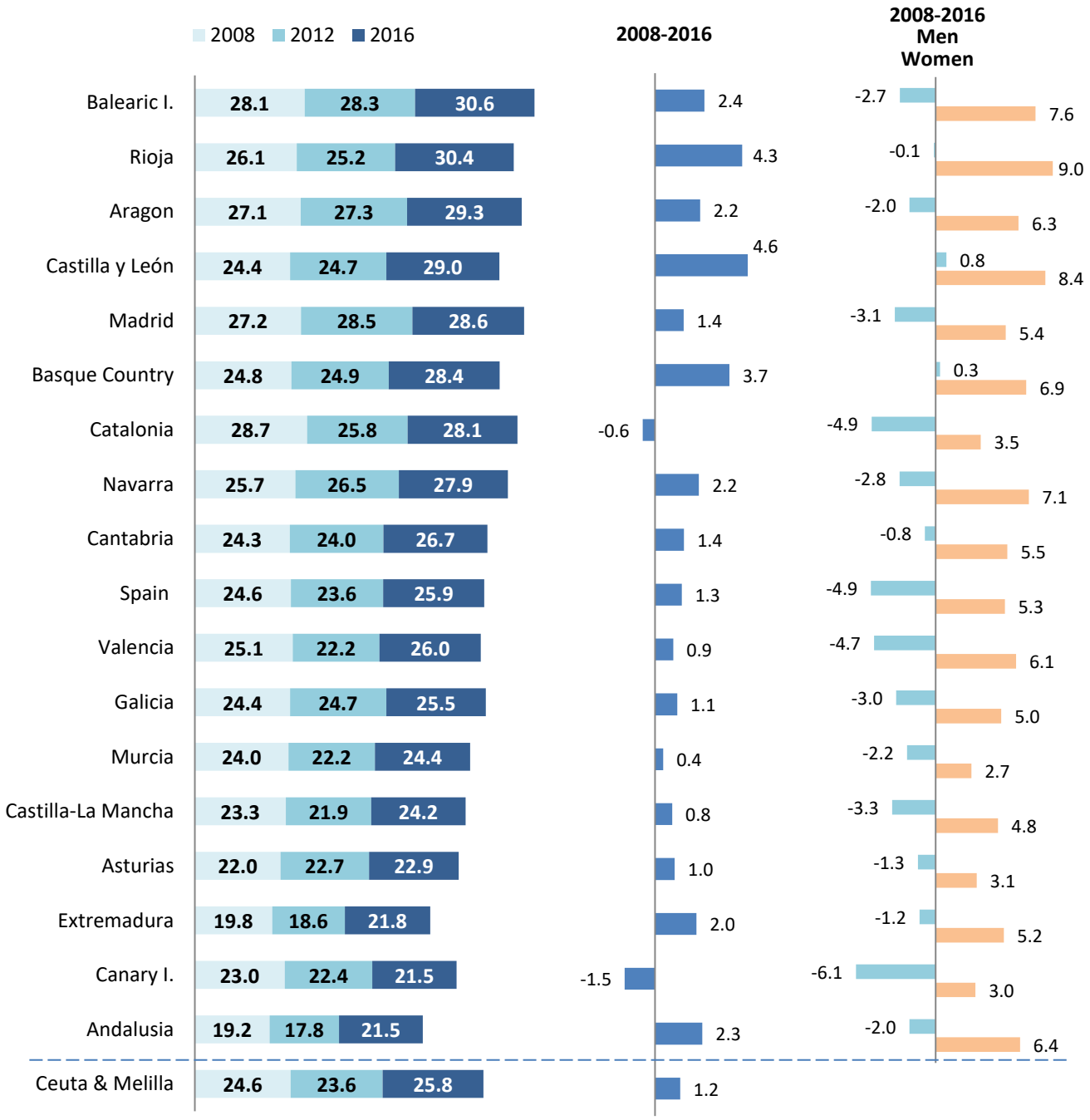
[9] However, the distortions of results caused by small sample sizes for regions with smaller population sizes can be even more pronounced when analysing data for men and women separately. This is the reason why Ceuta and Melilla were excluded from this analysis.

3.5.2. Employment

The variation of the domain employment scores showed little increases throughout the time period in the majority of the regions. Those which showed the highest increases over the course of eight years were Castilla y León, Rioja, and the Basque Country. On the other hand, the employment score for Canary Islands decreased by 1.5 points and, for Catalonia, it decreased by 0.6 points.

Evolution in the employment domain of the regions was distributed differently depending on the period. During the first four-year period 2008–2012, a noticeable decrease was observed in regions such as Catalonia, Valencia, Murcia or Castilla-La Mancha. Only a few regions showed a rise in the employment domain, such as Madrid or Navarra. Regarding the second four-year period 2012–2016, all regions, except Canary Islands, showed an increase. In Rioja, Castilla y León, Valencia, Andalusia, the Basque Country, and Extremadura the increase was of more than 3 points.

Figure 9: Changes in the "Employment" domain-specific score between 2008, 2012 and 2016



These results reflect the changes in how older people contribute through remunerated activities and how the labour market was affected by the economic crisis. Thus, the crisis has had more impact in the period 2008–2012 where the more substantial falls in employment levels were observed. The indicator 1.2 (employment rate in age 60–64) decreased slightly more than the 1.1 in 2008–2012 period, but it also regained over 5 points in the second period in comparison to 4 points of increase in the 1.1. Overall, the majority of the regions were able to recover from the consequences of the crisis in terms of employment, even though different timing can be perceived.

The increase of 1.7 points in the employment domain score over the period 2008–2016 was largely due to continuous increase in the employment of women (in the age groups 55–59 and 60–64, as we cannot analyse the employment rates disaggregated by sex in older groups). The highest increase was in the 55–59 age employment rate among women. An average drop of 2.4 points was observed for men in this period whereas women increased their scores by 5.5 points. These figures may be related to the financial crisis consequences, which affected comparatively more men's employment than women's in the age groups in question. Some regions showed a more pronounced decrease in male employment, such as Canary Islands, Valencia or Catalonia. Regarding women, Rioja, Castilla y León and the Balearic Islands showed the more pronounced positive increase in female employment.

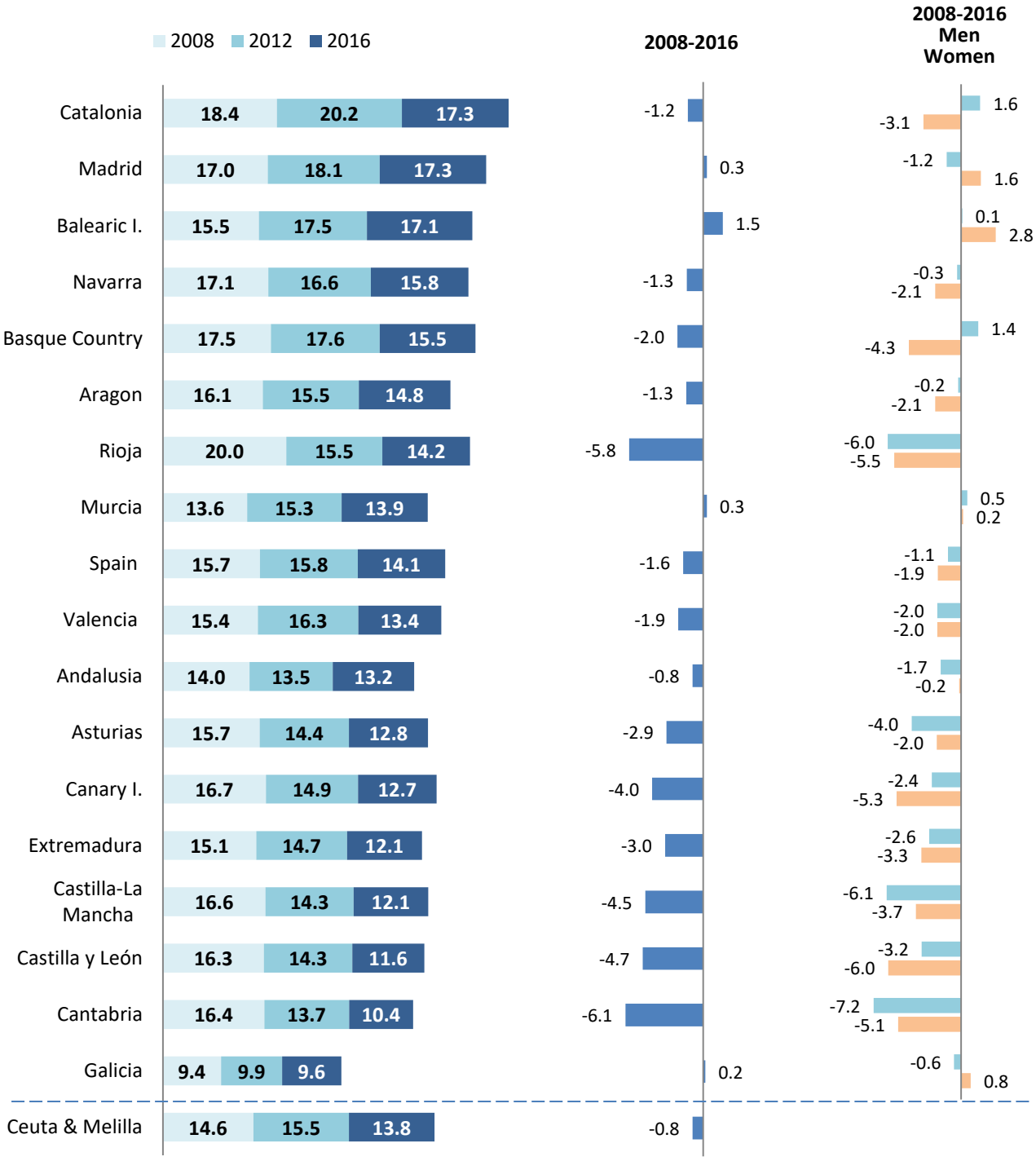
3.5.3. Participation in society

This domain, which reflects the unpaid contribution of older people to society, did not show much change over time, which is largely the result of the limited data availability for this study. The difficulty of finding sources with large sample sizes allowing for disaggregation by region, incorporating similar questions to create these indicators with a stable frequency forced the inclusion of adapted indicators based on questions that are neither exactly the same as in the EU-AAI nor reflect the changes of the domain over time. Some changes in the questions' wording included in the different waves as well as the use of the same value for the indicator 2.2 throughout different years hinders the comparison and analysis of the evolution of this domain's values over time.

Having established these particularities and limitations, the development of this domain results over time makes more sense. Thus, social participation domain score decreased on average in Spain by 2.2 points. Four regions showed a slight increase over the eight-year period, namely Madrid, Balearic Islands, Murcia and Galicia. In others, a decline of their scores over time was observed. In general, those with higher scores in this domain are those with higher median equivalised incomes, such as Aragón, Catalonia, Madrid, Navarra or the Basque Country, with scores close to 15 points and over.

The changes that occurred in the period 2008–2016 were falls for men and women in almost all the regions. Higher increases in men's scores were observed in Catalonia and the Basque Country whereas Balearic Islands and Madrid showed increases higher than 2 points in female scores. However, these changes throughout time differed between the different periods. Thus, in the four-year period 2008–2012 changes resulted from a decline in volunteering and an increase in political participation. The differences in the period 2012–2016 were related to the indicator or caring for the infirm and people with disabilities, which showed a general decline. The smallest declines were observed in Andalusia, Balearic Islands and Galicia. However, all these changes were affected by comparability problems related to the different wording in the available questions to construct the indicators of volunteering and political participation. They were also affected by the inclusion of weekly frequency in the question for the caring activity in 2016. Nonetheless, political participation of older people may have also increased due to their engagement during the period of the financial crisis to claim for social rights, which are affected by policies aiming to reduce social expenditure (Tarragó & Fernández-Ardèvol, 2013; Rodríguez, Dabbagh & Rodríguez, 2017).

Figure 10: Changes in the "Participation in society" domain-specific score between 2008, 2012 and 2016



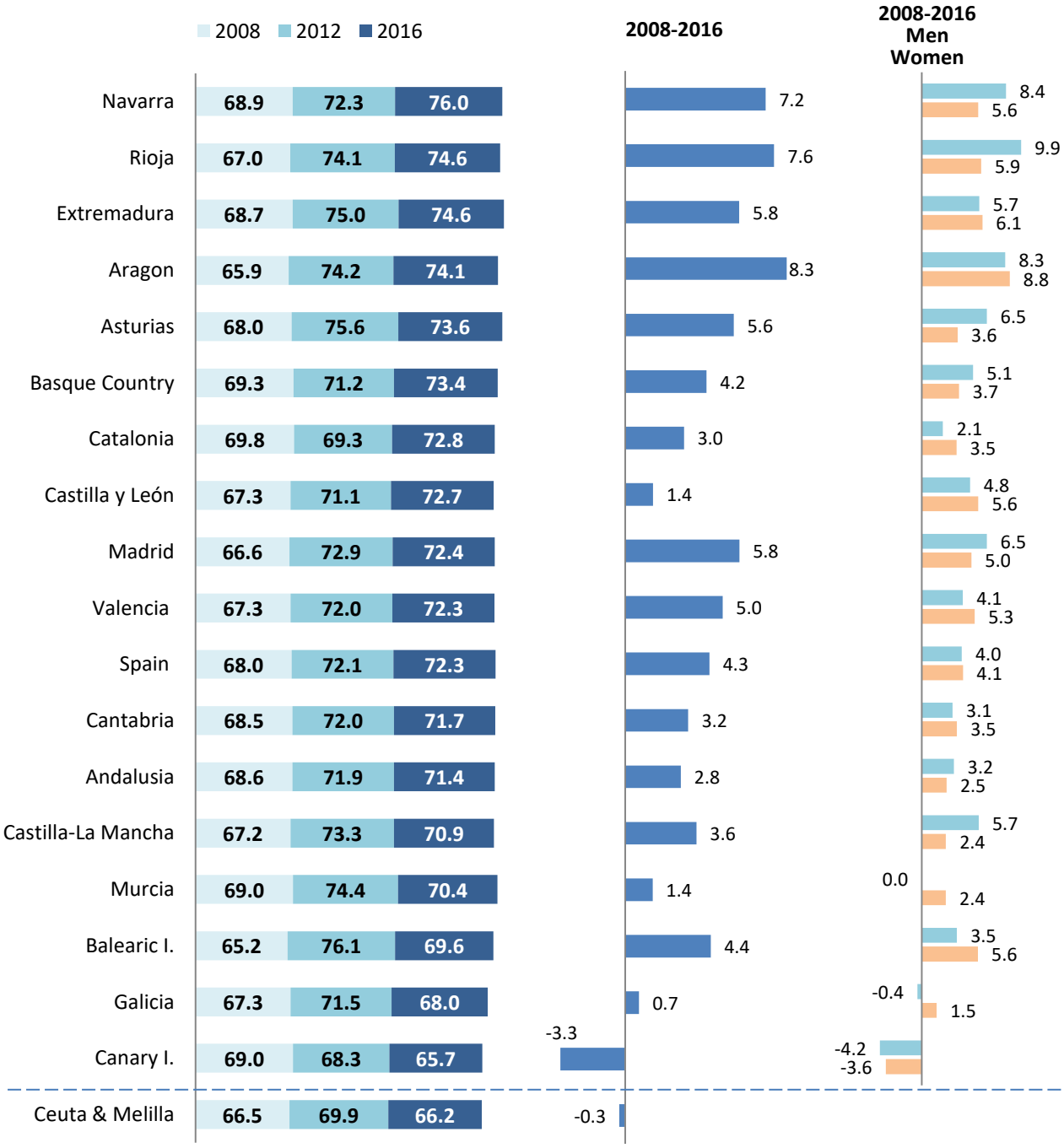
3.5.4. Independent, healthy and secure living

In this domain, the changes observed throughout the period 2008 and 2016 may be related to different aspects. The first one may be the different definition of the indicator 3.1 between the years 2008 and 2012, while the other may be the small sample sizes for specific indicators in regions with smaller population sizes, such as Rioja, Cantabria, Navarra or Ceuta and Melilla. However, some factors related to the economic crisis may have also impacted on variations in the different periods.

The change between 2008 and 2016 was positive for most of the regions, with higher changes in Aragon, Rioja and Navarra. Additionally, Asturias, Castilla y León, Valencia, Extremadura and Madrid showed an increase of 5 points or above. Only two regions had a decrease in their score: Canary Islands and Ceuta and Melilla.

Regarding the shorter periods of time, significant increases were observed in 2008–2012, with higher increases in Aragon, Rioja, Asturias and Balearic Islands. The period 2012–2016 was characterised more by a decrease in the majority of the regions, except for the Basque Country, Catalonia, Navarra, Castilla y León, Valencia and Rioja. In this sense, this domain may have been affected by the economic crisis-related factors with a certain delay.

Figure 11: Changes in the "Independent, healthy and secure living" domain-specific score between 2008, 2012 and 2016



It is interesting to observe changes in individual indicators for this domain. A significant change happened in the indicator that measures the income adequacy of older people, the relative median income. It was affected during this period with an average increase (16.4 points) and of 20 points or more in Ceuta and Melilla, Extremadura, the Basque Country, Castilla-La Mancha, Rioja, and Valencia. The decrease in the median income of the age group under 65 observed during 2008–2016, especially in age groups 50 and over (INE, 2008, 2012, 2016), was affected by the economic crisis and reduced access to the labour market. The factors, in part, explain the increase of values for this indicator. This increase was partly reflected in the share of older people at no risk of poverty, but not in the severe material deprivation indicator, which reflects the durable strain happening with long-term income deprivation. Additionally, a decrease of more than 10 points was observed in access to health and dental care in Murcia, Cantabria, Castilla-La Mancha and Canary Islands.

The analysis of the changes during the period 2008–2016 differentiated by sex showed a general increase for both men and women in all the regions except Canary Islands, Galicia and Murcia. In addition to the increases in relative median income, the indicators with higher increases in this period were independent living arrangements and no poverty risk, with sharper increases in Castilla y León, Castilla-La Mancha, Rioja, Navarra, Basque Country, Valencia, Extremadura and Madrid. The reason for this increase could be related to a decrease of the median available income in younger households and, therefore, the relatively better economic position of older people, both men and women, and may not relate to an increase in pensions.

3.5.5. Capacity and enabling environment for active ageing

The evolution of the fourth domain during the period 2008–2016 was positive, with a rise close to 6 points in Spain, from 55.8 to 61.7. Four regions saw an increase higher than eight points: Balearic Islands, Extremadura, Galicia and Rioja. Regarding the shorter periods of time, similar increases have been observed in 2008–2012 and in 2012–2016.

The indicators composing this domain demonstrated a general increase. The use of ICT saw the sharpest rise across the regions, of around 30 points. While life expectancy increased for all the regions, the indicator 4.2 (related to the healthy life expectancy) had a more diverse development. It decreased in seven regions, with the largest decline (over 3 points) being observed in Asturias, Aragon and Madrid, and it increased in all the other regions, with Extremadura, the Basque Country and Rioja registering an increase of more than 8 points.

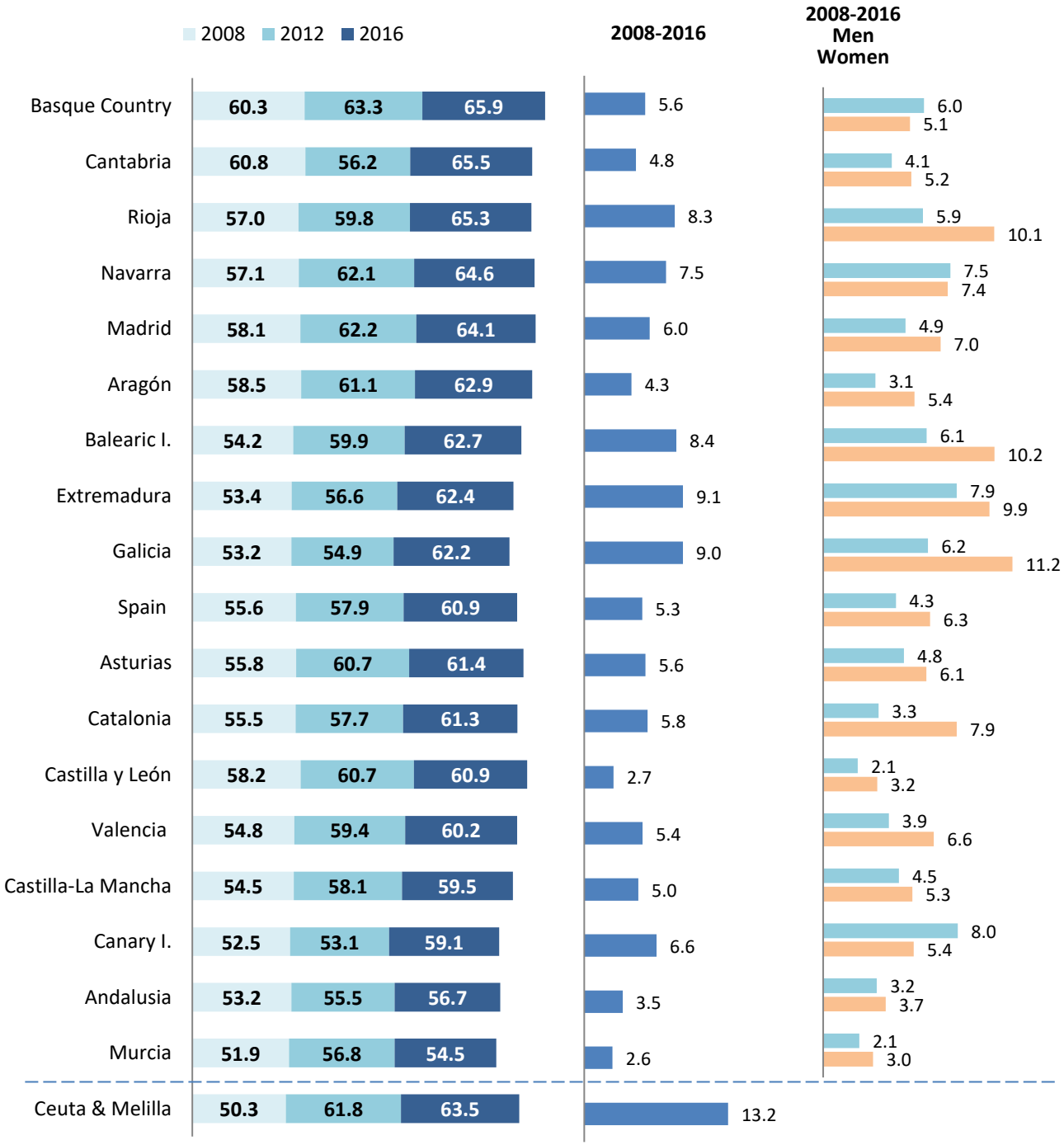
In mental well-being, 8 out of 18 regions saw an increase higher than 10 points between 2008 and 2016, with Canary Islands, Galicia and Extremadura being the regions with the highest increases.

Social connectedness generally increased across regions, except for Canary Islands, Castilla y León, Catalonia and Extremadura. Finally, the value of the indicator educational attainment has risen in all the regions, with an average increase close to 10 points between 2008 and 2016. However, some regions achieved higher increases (15 points and above), as was the case in Rioja, Galicia, Castilla y León, the Basque Country and Asturias. These increases may be related to better access to education experienced by the younger-older cohorts.

The changes in the fourth domain values for men and women were positive in all the regions. In the majority of the regions women's domain score increased more than that of men, with the exception of Canary Islands, the Basque Country and Navarra. The high rises both for men and women have been observed in ICT use and educational attainment. In addition, gender gaps changed in both indicators since 2008 in almost all the regions. In use of ICT, Asturias, Balearic Islands, Castilla y León, Valencia, Extremadura, Galicia and Murcia have showed a higher gender gap, being in favour of men except in Extremadura, whereas, a decrease in gender gap was observed in the other regions.

Furthermore, educational attainment in the age group 55–74 increased for both men and women in the eight-year period, but women saw a higher increase compared to men except in Balearic Islands, Canary Islands and the Basque Country. Thus, the value on average of an upper secondary attainment for men was 31.6 in 2008 and 21.4 for women, while in 2016 they were 40.1 and 32.6 respectively. As previously outlined, these rises reflect the increasing access to education that young-old generations have had. However, even though women's scores increased in 4.2, 4.3 and 4.6 at a higher pace than for men, they are still behind men, so these matters should be addressed to achieve equity between genders.

Figure 12: Changes in the "Capacity and enabling environment for active ageing" domain-specific score between 2008, 2012 and 2016



4. Concluding remarks

The results of this pilot study indicate a general increase of the overall Active Ageing Index in the majority of the regions analysed throughout the eight-year period 2008–2016. The changes observed were more pronounced for women than men in almost all the regions, but three of them had a decrease in the men's evolution of the overall AAI scores.

This positive trend was most noticeable in the domain of employment. During this period, the data point to a modest recovery in older people's employment from the financial crisis, which affected Spain from 2008. The increase was higher for women than men, for whom decreases were observed. However, more effort should be applied to increase older people's contribution through remunerated activities, perhaps implementing more flexible retirement schemes.

Regarding the second domain, a decrease was observed in its scores. The indicators of voluntary activities (2.1) and caring for the infirm and disabled (2.3) showed a decrease, whereas the political participation scores increased. Nonetheless, no general conclusion can be drawn from the analysis due to the comparability problems explained in detail in the methodology section of this report.

Regarding the domain of independent living, the data showed an increase, which was linked to the relatively higher position of older people in some of the indicators of financial security more directly related to income, even though severe material deprivation increased slightly during this period. However, data showed that these developments are not related to the improvement of older people's income as such, as they generally have stable income (pensions), but rather to the decrease in the income of the population aged 65 and below (Abellán & Pujol, 2016), which was one of the consequences of the economic crisis. Finally, the fourth domain showed a positive increase in all the regions, with access to ICT and higher levels of education having the largest impact. Thus, the digital divide is decreasing progressively and older people are using more mobile applications (González & Fanjul, 2018).

Considering these scores, the results of this study can be seen as positive. The potential for active ageing is being enhanced, despite the circumstances that occurred during the period covered in this study. However, these conclusions should be taken cautiously, especially for the second domain, because of the limitations that have been mentioned throughout the report. The first limitation was the small sample sizes in regions with smaller population sizes, especially when providing data for men and women separately, may have affected the results. The second limitation was the different questions in available secondary data sources from national statistical operations on which indicators were based. Nonetheless, it is possible to assert that a small general increase during this period has occurred even if the quantitative data are influenced by the limitations outlined. In addition, conclusions from the analytical report AAI 2014 (UNECE/European Commission, 2015) can be applied in this study due to the difficulties found when relating policies to the results obtained, which may have been influenced by cohort effects and by external circumstances, such as the financial crisis.

However, this pilot study was an exceptional opportunity that allowed the testing of whether this tool and framework for measuring and enhancing the potential of older people for active ageing could be used at NUTS-2 by using secondary data sources from national statistics operations in Spain. The realisation of this study is important as the AAI has been becoming progressively a relevant tool in the EU to assess the development of the contribution of older people from a multidimensional perspective, not only regarding outcomes but also in terms of ageing capital. This index provides policymakers and stakeholders with evidence-based information regarding opportunities and areas for improvement in a group of indicators covering a multitude of facets of active ageing. Thus, it may help to optimise policies and realise the potential of living longer. In the future, the use of AAI can help to monitor in

which aspects the strategies or plans for older people and active ageing developed by the regions have an impact.

Calculating AAI at subnational level is relevant, especially in a country such as Spain, where autonomous communities have many competences of government, in order to know which aspects social policies should influence. Thus, low results in regions, such as older people's access to employment, security and health, should be addressed in order to activate further their potential for contribution to society. Regions with low constant scores may consider this analysis as an opportunity to reflect on how to increase employment and activate other ways of contributing among older people as well as how to improve the capacity of the environment to enhance active ageing.

Furthermore, efforts should be made to reduce the gap between men and women to achieve gender equality, and calculating the AAI can help to evidence and monitor progress in this direction over time. This is particularly important because even if women showed higher increases in their scores compared to men, they still fall behind.

In undertaking this study, some limitations have already been described, which mainly related to the lack of sufficient, robust, comparable and consistent data over time. It is, therefore, necessary to recognise the limitations of certain results provided in this report at subnational level, at least for the smaller regions, when using secondary data sources until a common statistical tool is available for the EU to cover the indicators of the AAI. This can be derived from an in-depth debate on the meaning of each of the dimensions in different contexts and their specificities. For instance, this is the case for voluntary activities or caring for children and grandchildren and the infirm and people with disabilities, as there were no comparable data to cover these indicators and, therefore, these values in this study do not reflect reality, especially when comparing these data to those obtained as a result of studies realised at subnational level in several Spanish regions. It may be interesting to take the AAI as a shared tool to monitor active ageing at NUTS-2 level (even beyond Spain). This would require achieving a consensus about the common concepts in order to obtain enough quality data that allow for comparability. A simple (but potentially costly) solution could be running a common survey or adding several questions from the European Quality of Life Survey (EQLS) to large sample size surveys, such as Labour Force Survey (LFS) or Statistics on Income and Living Conditions (SILC). To do so, statistical offices should be engaged and involved in this process. Therefore, this pilot study allowed evidencing those areas that should be improved in order to have better data to calculate this index.

Finally, the arguments outlined above are related to the importance of the calculation of the AAI at subnational level to enhance policies fostering active ageing as many dimensions are affected by policies that are designed and carried out at local and regional levels (UNECE/European Commission, 2015). This tool may encourage reflection and planning in the future, in order to further enhance the contribution to society by older people and to achieve more balance among regions. Rankings used for illustration of AAI results in this report give an easy-to-grasp overview of the situation and its development in regard to active ageing in the regions. However, the position in the ranking, while it can serve as a starting point for further analysis, should not be seen as the key message. Taking context into account – national, regional, local – is essential for analysing AAI results. Furthermore, deeper knowledge and analysis of the different realities and cultures, which are not detailed in depth in this report, would enrich the interpretation of the results. This fact, in addition to the lack of reliable data for some indicators of the AAI at regional level, points to a recommendation to carry out a common survey, which would allow for obtaining the missing data or, as a simpler alternative, for adding certain questions to the existing national surveys. Therefore, a common tool could be available at subnational level in order to allow for regular measurements over time and monitoring of active ageing.

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6. Annex

Detailed description of questions used for indicators

Domain 1. Employment

1.1. Employment rate for 55-59

As original

Source: EPA

Years: 2008, 2012, 2016

1.2. Employment rate for 60-64

As original

Source: EPA

Years: 2008, 2012, 2016

1.3. Employment rate for 65-69

As original

Source: EPA

Years: 2008, 2012, 2016

1.4. Employment rate for 70-74

As original

Source: EPA

Years: 2008, 2012, 2016

Domain 2: Participation in society

2.1. Voluntary activities

Adapted from the original EU-AAI

Source: ECV

Year: 2006 (for AAI 2008)

Question: "Have you participated in activities of organisations for charitable or humanitarian purposes in the last 12 months?"

- **Yes**
- No

Adapted from the original EU-AAI

Source: ECV

Year: 2015 (for AAI 2012, 2016)

Question: "In the last 12 months, have you participated in volunteer activities through any organisation, association or group?"

- **Yes**
- No, not interested
- No, lack of time
- No, other reasons

2.2. Caring for children, grandchildren

Adapted from the original indicator: Percentage of people 65 years old and over caring for children, grandchildren at least once per week.

Source: Study of Older People (SOP 2010)

Year: 2009-2010 (for AAI 2008, 2012, 2016)

Question: "Have you ever helped any of your children in the daily care of your grandchildren, while their parents work?"

- **Yes, currently**
- Yes, previously but not now
- No
- Does not have grandchildren
- NS.NC

"How often do you give such help?"

- **Almost daily**
- **Almost every week**
- Almost every month
- Less frequently
- NS.NC

2.3. Caring for infirm and disabled

Adapted from the original indicator: Percentage of people 65 years old and over caring for older people (absolute response/weekly).

Source: Study of Older People (SOP 2010)

Year: 2009-2010 (for AAI 2008, 2012)

Question: "During the last two months, have you cared for any person (friends, family or neighbours) who, due to your health condition, would need help for:"

- Personal care
- Domestic help
- Help in management
- Accompaniment"

Source: ENS

Year: 2017 (for AAI 2016)

Question: "Do you care, at least once a week, for any older person or someone who has a chronic disability? Do not consider it if it is part of your job."

- **Yes**
- No

2.4. Political participation

Adapted from the original EU-AAI

Source: ECV

Year: 2006 (for AAI 2008)

"Have you participated in activities of political parties or trade unions in the last 12 months?"

- **Yes**
- No

Adapted from the original EU-AAI

Source: ECV

Year: 2015 (for AAI 2012, 2016)

Question: "In the last 12 months, have you participated in activities of political parties, in a demonstration, in written requests to politicians or the media, etc.?"

- **Yes**
- No, not interested
- No, lack of time
- No, other reasons

Domain 3: Independent, healthy and secure living

3.1. Physical exercise

Adapted from the original EU-AAI: Percentage of older people between 55 years old and 69 practising physical activity at least 10 times in the last two weeks

Source: ENS

Year: 2006 (for AAI 2008)

Question: "Can you tell me how many times you have practised for more than 20 minutes during the last two weeks:

- Moderate physical activity such as biking, gymnastics, aerobics, running, swimming
- An intense physical activity such as soccer, basketball, cycling or competitive swimming, judo, karate or similar."

Adapted from the original EU-AAI: Percentage of older people between 55 years old and 69 practising physical activity every day or almost every day, at least five times in the last seven days.

Source: ENS

Year: 2012 and 2017 (for AAI 2012 and 2016)

Question: "During the past seven days, how many days did you do intense physical activities?" "During the past seven days, how many days did you do moderate physical activity? Please, do not include walking."

3.2. Access to health and dental care

As original

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

Question: "During the past 12 months, were there any occasions when you really needed to see a doctor (except dentist) but did not?" and "During the past 12 months, were there any occasions when you really needed to see a dentist but did not?"

- Yes, at least once
- **No, at no time (to both).**

3.3. Independent living arrangements

As original

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

3.4. Relative median income

As original

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

3.5. No poverty risk

As original

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

3.6. No severe material deprivation

As original

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

3.7. Physical safety

Adapted from the original EU-AAI, similar to the AAI 2012

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

Question: "Does the household have problems with crime or vandalism in the area?"

- Yes
- **No**

3.8. Lifelong learning

Adapted from the original EU-AAI: Percentage of people 55 years old and over who stated that they received education or training in the four weeks preceding the survey.

Source: EPA

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

Questions: "Have you done any type of studies or training during the last four weeks included in the official curriculum?"

"Have you done any type of studies or training during the last four weeks outside of the official curriculum?"

- **Yes**
- No

Domain 4: Capacity and enabling environment for active ageing

4.1 Remaining life expectancy achievement of 50 years at age 55

As original.

Own estimation based on INE data.

Source: INE

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

4.2. Share of healthy life years in the remaining life expectancy at age 55

As original

Own estimation based on ECV data.

Source: ECV

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

4.3. Mental well-being

Adapted from the original EU-AAI. Using the General Health Questionnaire 12 (GHQ12)

Source: ENS

Year: 2006, 2012 and 2017 (for AAI 2008, 2012 and 2016)

Items:

1. Over the past few weeks, have you been able to concentrate on whatever you're doing?

(0 = better than usual; 1 = same as usual; 2 = less than usual; 3 = much less than usual)

2. Over the past few weeks, have you felt you are playing a useful part in things?

(0 = more so than usual; 1 = same as usual; 2 = less so than usual; 3 = much less than usual)

3. Over the past few weeks, have you felt capable of making decisions about things?

(0 = more so than usual; 1 = same as usual; 2 = less so than usual; 3 = much less than usual)

4. Over the past few weeks, have you been able to enjoy your normal day-to-day activities?

(0 = more so than usual; 1 = same as usual; 2 = less so than usual; 3 = much less than usual)

5. Over the past few weeks, have you been able to face up to your problems?

(0 = more so than usual; 1 = same as usual; 2 = less so than usual; 3 = much less than usual)

6. Over the past few weeks, all things considered, have you been feeling reasonably happy?

(0 = more so than usual; 1 = same as usual; 2 = less so than usual; 3 = much less than usual)

7. Over the past few weeks, have you lost much sleep because of worry?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

8. Over the past few weeks, have you felt constantly under strain?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

9. Over the past few weeks, have you felt you could not overcome your difficulties?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

10. Over the past few weeks, have you been feeling unhappy and depressed?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

11. Over the past few weeks, have you been losing confidence in yourself?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

12. Over the past few weeks, have you been thinking of yourself as a worthless person?

(0 = not at all; 1 = no more than usual; 2 = rather more than usual; 3 = much more than usual)

The 12-item version of the General Health Questionnaire (GHQ12) was scored as recommended by Lobo et al.; Likert responses were recoded (from 1, 2, 3, 4 to 0, 0, 1, 1), then the scores were totalled and the cut-off point was established following the recommendations of Goldberg et al. (1998).

The indicator refers to the percentage of people 55 and over who have good mental health, having a score below 2 points in this questionnaire.

4.4. Use of ICT

As original.

Source: Survey on equipment and use of information and communication technologies in homes- ICT Survey)

Year: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)

4.5. Social connectedness

Adapted from the original.

Source: ECV

Years: 2006 (for AAI 2008) and 2015 (for AAI 2012 and 2016)

Question: "How often do you meet, in a normal year, with family members who are not members of your household?"

"How often do you meet, in a normal year, with friends who are not members of your household?"

- **Daily**
- **Weekly (but not daily)**
- Several times a month (but not weekly)
- Once a month
- At least once a year (but less than once a month)
- Never
- No friends outside the home

4.6. Educational attainment

As original

Source: ECV

Years: 2008, 2012 and 2016 (for AAI 2008, 2012 and 2016)