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### **Regional differences in population ageing in Spain (the case of the Valencian Community)**

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## Introduction

It is recognized that while the 20th century was the one of population growth, the 21st century might come out as the one of population ageing. All countries face challenges resulting from the relationships between ageing and almost all spheres of life, especially labour market and sustainability of social security systems. Globally the size of the elderly is growing faster than the size of other age groups. Such rapid growth will require far-reaching economic and social adjustments in most countries, as well as social policy changes. With ageing development the need for thorough analysis of this process increases.

In general Spain may be considered as rather “old” country. Thus, according to World Population Ageing 2009, in 2009 it was the 18th in the percentage of the elderly (60+) and the 21th in median age among 196 countries. The percentage of population aged 60 or over in Spain (22.2%) is slightly greater than in Europe as a whole (21.6%), and the median age for Spain (39.8 years) is almost equal to that for Europe (40.1 years). Population of Spain is ageing more rapidly than that of Europe as a whole – in 1950 the proportion of the elderly (60+) in Spain (10.8%) was lower than that in Europe (11.8%), since mid-1980<sup>th</sup> it has been greater than in Europe, and by 2050 it may reach 40.2% while for the whole Europe this share is expected to be 33.6% (medium variant WPP, The 2012 Revision). So for Spain ageing issues are of particular importance.

Spain consists of 17 big administrative units called Autonomous Communities (*comunidad autonoma*) which in turn are divided into smaller units (*provincias*; 50 provinces in all). Demographic development of such a big country like Spain is not homogeneous, and differences between communities in values of indicators of main demographic processes lead to diversities of population age structures, which result in differences in values of ageing indicators. Moreover, inside communities substantial regional differences may take place. Therefore a situation is possible when values of ageing indicators for a community don't differ much from the country's levels, while inside the community regional differences are greater than the mentioned ones. The Valencian Community (VC) gives an example of such situation that requires thorough consideration.

In the Valencian Community (the fourth country's region in terms of population size) live 10.9 % of Spanish population (on January 1, 2008). In the Valencian Community (VC) fertility (expressed in terms of the total fertility rate) and life expectancy don't differ much from those for Spain as a whole, while substantial differences in migration take place (e.g. in 2007 net migration (per 1000) for Spain was equal 16.0 and for the VC – 24.3). The VC has the highest rate of internal movement in Spain, one of the highest rates of external migration and a high proportion of population of foreign citizenship. Effects of migration on ageing in the VC were studied in a previous research[1].

The Valencian Community consists of three parts: Alicante, Castellon and Valencia having different population size and demographic indicators. Valencia is the greatest region of the VC – its size amounts to 50.6% of the VC population, and Castellon with its 11.8% of the VC's population is the smallest one. Alicante (1891.5 thousand, i.e. 37.6% of the considered region) occupies an intermediate position.

The paper aims to make a comparative analysis of ageing development in the regions of the VC since the beginning of the 1990s.

Changes in age structure by major age groups will be considered, and a number of ageing characteristics will be computed for the VC and its regions. Ageing indicators for the VC will be compared with those for Spain as a whole. Gender differences will be focused on. To characterize the situation in regard to population ageing, conventional measures and quantitative characteristics that take account of remaining years of life (prospective indicators) will be examined.

The paper is based on censuses and micro-data on vital events.

### **Driving forces of population ageing**

It is recognized that main driving forces of population ageing are changes in fertility, mortality and migration. Thus, dynamics of indicators of main demographic processes (fertility, mortality and migration) have been considered for Spain as a whole, the VC and its regions (Alicante, Castellon and Valencia) since 1990.

It has been shown that:

- no significant differences in the TFR dynamics for Spain and the VC, TFR values for the VC have been higher than those for Spain, except for 2009, 2010;
- for the VC, until 1998 the TFR had decreased, then some increase took place until 2008 followed by the decrease. The latter may be a result of recent economic crisis. TFR values for the beginning (1991) and the end (2010) of the considered period are equal (1.34 births per woman).
- until 2001 maximal TFR values were observed in Alicante (in 2001 in Alicante and Castellon), in 2002 – 2009 – in Castellon (in 2009 in Castellon and Valencia), and in 2010 – in Valencia. In turn, minimal TFR values were observed in 1991 – 2003 in Valencia, and since 2004 – in Alicante. Regional differences in TFR have not been very big, i.e. the difference between maximal and minimal TFR values has the range between 0.02 (in 2004) and 0.19 (in 1991).

Dynamics of life expectancy at birth and at older ages (LE0, LE60, LE65,..., LE85) for Spain as a whole, the VC and its regions (Alicante, Castellon and Valencia) since 1990 has been analyzed.

It has been shown that the dynamics of LE0 and LE at older ages for all considered populations has been similar, i.e. an increase took place (though it was not monotonous). Total increase over the period 1991-2010 for Spain, CV, Alicante, Castellon, Valencia was almost equal (4.8-4.9 years or 6.3.-6.4 % of the initial values). Relative increase (relative to values in 1991) for LE at older ages was more significant than for LE0. The most pronounced decrease in LE took place in 1999 (for all regions except for Castellon) due to some increase in mortality from infectious diseases. Gender differences in life expectancy at birth and at older ages are well pronounced.

As to migration, in 1998 – 2010 maximal values of net migration in the VC, Castellon and Valencia were observed in 2007 (in Alicante in 2004), and since then in these regions net migration has declined. This trend is connected with the recent economic crisis. At present in the VC, Castellon, Valencia net migration is negative, moreover it is negative both for Spanish citizens and PFC (population of foreign citizenship).

Changes in main demographic processes have an effect on age structure changes, which, in their turn, determine dynamics of ageing indicators.

### **Age structure changes**

Population ageing should not be considered isolatedly but within the context of age structure transformation. Changes in proportions of the aggregated age groups (children, working age population and the elderly) are examined.

No principal differences between age structures by major age groups for Spain and the VC have been revealed. For example (see Fig. 1), in 1991 – 2011 the value of the proportion of population aged 65+ has increased by 24.1% for Spain and by 25.6% for the VC (relative to 1991), while noticeable regional differences within the VC took place. Thus, the biggest increase was observed in Alicante (relative increase amounted 41.2%), and the smallest one – in Castellon (relative increase amounted 3.3%).

The internal age structure of the group of the elderly to some extent determines the need for care and support in daily living. It does not remain constant, and its changes should be taken into account. It can be clearly seen that the population of the elderly is itself ageing, i.e. among those aged 65 years or over, the population aged 80+ is the fastest growing group.

### **Conventional ageing characteristics**

To characterize the situation with population ageing in a population a number of ageing characteristics may be used, including proportions of the elderly (e.g. Prop. 60+, Prop. 65+, Prop. 85+) in the total population, ageing index (the number of population aged 65+ per 100 children under the age 15), old age dependency rate (OADR, the number of population aged 65+ per 100 working age population), parent support ratio (number of persons aged 85+ in relation to those people aged 50 to 64 years).

All listed characteristics are computed for Spain as a whole, the VC and its regions (Alicante Castellon, Valencia) for the period 1991 – 2011. As an example here changes in OADR are given.

Fig. 2 shows that while OADR for Spain and the VC have very similar dynamics and close values, within the VC substantial differences are observed. Thus, until the year 2005, greatest (inside the VC) values of OADR were seen in Castellon, and since 2005 – in Alicante. Such changes are connected with changes in migration and require further consideration.

### **Prospective ageing measures**

In Spain like in other developed countries increase in life expectancies has been observed. Thus, in 1935 life expectancy at birth (LE0) for males was 50.7 years while in 2009 – 78.5 (for females – 54.6 and 84.6 correspondingly). Life expectancy growth takes place at older ages too. Thus, in 1935 LE60 for males was 13.9 years while in 2009 – 22.0 (for females – 15.9 and 26.6 correspondingly). It is acknowledged that life expectancy increase is one of driving forces of population ageing. In its turn, progressing population ageing attracted researchers' attention to the concept of age.

Generally, with advances in health and life expectancy, measuring population aging presents a problem to demographers because the meaning of the number of years lived has changed. In Western Europe in 1800, for example, less than 25 percent of males would survive to age 60, while today more than 90 percent of them do. A 60-year old man in Western Europe today has around the same remaining life expectancy as a 43-year-old man in 1800. Thus conventional ageing measures based on chronological age should be supplemented by measures that take account of remaining years of life because many behaviours depend on the number of years left to live [4-7].

Conventional ageing indicators are based on chronological age and in many instances consider people as being old when they reach age 65. As stated in [6, 7], with advances in health and life expectancy, ... the meaning of the number of years lived has changed. In Western Europe in 1800, for example, less than 25 percent of males would survive to age 60, while today more than 90 percent of them do. A 60-year-old man in Western Europe today has around the same remaining life expectancy as a 43-year-old man in 1800. Today, a person who is 60 is considered middle-aged; in 1800, that 60-year-old was elderly. Older people are regularly doing things that were restricted to younger people only a few years earlier. Now, 80-year-olds get knee replacements so they can continue hiking. Older people tend to have fewer disabilities than people of the same age in earlier decades, and now there is some evidence that cognitive decline is being postponed as well. The authors suggested new ageing measures that take account of remaining life expectancies (RLE). Measures that account for life-expectancy change are given in Tab. 1.

Table 1. **Conventional ageing measures and indicators that take account of remaining life expectancies (RLE).**

<i>Conventional ageing indicators</i>	<i>Prospective ageing measures</i>
<b>Prop. 65+ (or Prop. 60 +)</b> – proportion of population aged 65+ (or 60+)	<b>Prop. RLE 15</b> – proportion of persons in age groups with RLE = 15 years or less
<b>OADR (old-age dependency rate)</b> – relative size of the old age population to the working age population	<b>POADR (prospective old-age dependency rate)</b> – number of persons in age groups with RLE = 15 years or less per 100 persons in age groups older than 20 (15 years old) and having RLE greater than 15
<b>Aver.age</b> – average age	<b>PARYL - population average remaining years of life</b>

The listed prospective ageing measures are computed for Spain as a whole and the VC for the period 1991 – 2011 and for Alicante Castellon, Valencia for the period 1998 – 2010. An important point in studying prospective measures is the age for which RLE = 15 (**age: RLE = 15**). Thus **age: RLE = 15** has been analyzed (for males, females and both sexes).

It may be concluded that values of Prop. RLE 15 have been smaller than values of Prop. 65+ over the considered period for all considered populations. For the whole period Prop. RLE 15 has slightly decreased, the dynamics of this indicator being dependent on **age: RLE = 15**.

*Detailed description of findings will be given in the full paper*

## Conclusions

Population ageing is developing. This process will certainly be the source of many challenges in coming decades. But there is no reason to exaggerate those challenges through mismeasurement [8].

Substantial regional differences in values of ageing indicators have been revealed. It has been shown that visible closeness of values of ageing indicators for a community and the country may hide substantial regional differences inside the community. It may be concluded that to be effective, socio-demographic policies should take into account not only age-structural changes in general but regional differences in ageing process in particular.

Results of the study may contribute to the management, administration and planning of social programmes related to population ageing.

## Main references

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Fig. 1. Changes in the population age structure by major age groups, the CV, 1991 – 2011 (relative to the year 1991)

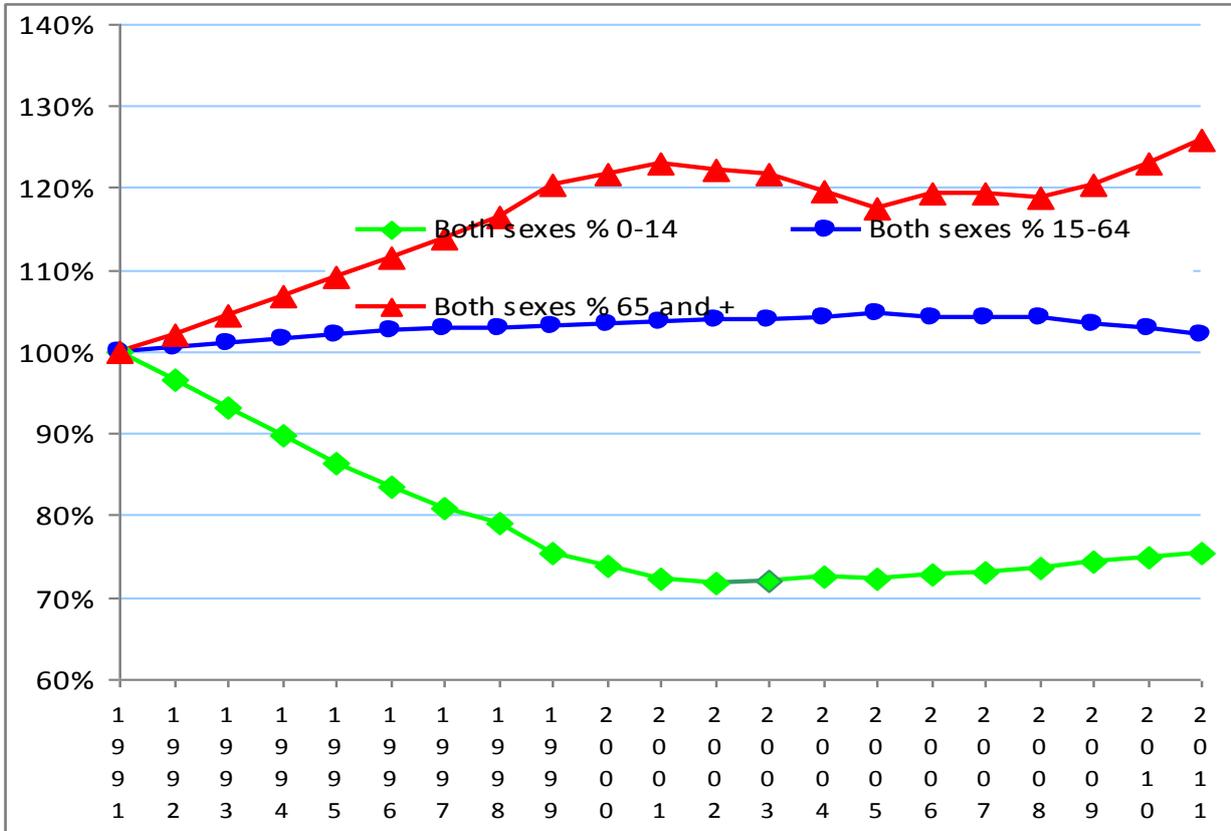


Fig. 2. Old age dependency rate (OADR), Alicante, Castellon, Valencia, the CV and Spain, 1991 – 2011

