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# Longevity trends in entrepreneurial activity. An analysis of the characteristics of senior entrepreneurship in Spain

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**Abstract**

Over the last decades, the development of entrepreneurial activity has allowed greater growth and economic development in Spain. However, within the analysis of Spanish entrepreneurial dynamics, insufficient attention has been paid to a key group: senior entrepreneurs. The fact that the first two decades of the 21st century have been accompanied by the two worst economic crises in remembrance since the Great Depression of the 1930s, has had a great impact on the professional careers of the group of senior workers, who their careers have been cut short due to the closure of companies (Kautonen, 2013; Maâlaoui, et al., 2013; Clegg and Fifer, 2014; Isele and Rogoff, 2014; Červený, Pilková y Rehák, 2016; Schøtt et al., 2017; Biron and St-Jean, 2019; Soto-Simeone and Kautonen, 2020). In turn, the changes in the environment that have occurred in these two decades lead to the discovery of opportunities for which their experience and skills are key, giving this group the opportunity to undertake projects based on the dynamics of change. In this way, the present work delves into the reality of senior entrepreneurs in Spain from a regional perspective, providing evidence based on information from the EPA microdata for the autonomous communities. The results of the study allow an approximation to the real dimension of senior entrepreneurship in the Spanish regions, providing recommendations and suggestions to generate awareness policies towards senior entrepreneurship (Schøtt et al., 2017; Fachinger, 2019).

**Key words:** senior entrepreneurship, regional analysis, microdata.

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## 1. Introduction

Longevity is probably one of the most used terms to describe the reality facing developed societies. As noted by Vaupel, Villavicencio & Bergeron-Boucher (2020), in the countries with the best life expectancy performance, life expectancy has increased by approximately 2.5 years per decade since 1840, continuing this trend to the present day. Likewise, the reduction of inequalities in terms of longevity means that in the countries with the highest life expectancy, it is the octogenarians and nonagenarians who have the highest probability of mortality. This means that, if this progress continues, the majority of children born in this millennium will reach 100 years of age. However, despite this positive evolution of life expectancy, the mortality trend among centenarians has not changed in the last 30 years, so that the maximum age of mortality observed has not increased (Modig, et al., 2017).

In the case of OECD countries, life expectancy at birth has increased from 67 years in 1960 to 80 years in 2018. Spain stands out as one of the countries with the highest life expectancy, with 83.4 years in 2018, an increase of 14 years since 1960, with Hong Kong and Japan being the two main paradigms in this regard for decades, showing a life expectancy of 84.93 and 84.21 years in 2018 respectively.

Likewise, this increase in longevity is affecting the decisions that individuals make throughout their life cycle, among which career decisions stand out (Solinge, Henkens, 2009; Domínguez, del Olmo & Herce, 2020). Indeed, as St-Onge & Beauchamp (2022) point out, both the aging of the population and the shortage of talent lead older workers to prolong their professional life as long as the psychological needs of autonomy, competence, relatedness, and beneficence. Ameriks, et al. (2020) note that the willingness to work closer to or even beyond retirement age is conditioned by the lack of acceptable job opportunities (e.g. with flexible hours) or by the low expectation of finding them.

However, extending working life can lead to problems, such as discrimination, more common among professionals closer to retirement, especially for women, although in the case of comparable experiences, there does not appear to be age discrimination between older job seekers and younger job seekers. (Neumark, Burn & Button, 2019). In addition, as You & Lee

(2021) point out, social barriers, such as negative societal biases regarding the work capacity of senior professionals, limit active aging.

One alternative that can overcome the above-mentioned barriers is senior entrepreneurship. Although, as Matricano (2018) points out, entrepreneurship was considered an activity for young people, changes in the economic and demographic environment in recent decades have led to a change in that perspective, concluding that there are no differences in terms of intellectual capital between young people and senior professionals who intend to start a business. In this sense, Fernández-Lopez, et al. (2022) point out that due to the impact of population aging on public social security systems, public decision-makers have turned senior entrepreneurship into an option to reduce unemployment rates and delay retirement age. On the other hand, as Partouche-Sebban & Maâlaoui (2019) point out, the physical, cognitive and social changes experienced through the aging process can bring new opportunities for personal and professional development through entrepreneurship. In fact, Cannon & Kurowska (2013) find a growing interest in self-employment among people aged 50 and older, especially for women.

Therefore, the aim of this paper is, on the one hand, to show the reality of senior entrepreneurship in Spain and, on the other hand, to contrast whether this entrepreneurship arises from the need to face the unemployment situation or from the opportunities detected in the market by a group of highly experienced professionals.

To do this, we start with a review of what the literature calls senior entrepreneurship, also pointing out some differentiating characteristics of the entrepreneurial activity carried out by this group of professionals. Next, and considering that Spain is one of the countries with the highest life expectancy in the world, the reality of senior entrepreneurship in Spain is described. Thirdly, a study of the socio-demographic characteristics of entrepreneurship in Spain is developed, contrasting the hypothesis of entrepreneurship by necessity or opportunity that underpins this work. Finally, the main conclusions reached in the analysis are outlined.

On the one hand, the article provides evidence on the characteristics of senior entrepreneurs in Spain, one of the countries with the highest life expectancy in the world and where the senior group is becoming increasingly important, but where, on the other hand, the study of senior entrepreneurship as a professional alternative has not been studied in sufficient depth.

Likewise, the main conclusions allow us to understand that senior entrepreneurship in Spain is based on the need to continue with a professional career in the face of the challenges of the pension system and its reforms and the difficulties derived from the evolution of unemployment. The socio-demographic factors of importance among senior entrepreneurs are age, educational level, the profession of the partner or whether the family has children or not. However, the sector of professional activity and the region are also important in the decision to become an entrepreneur.

Therefore, the conclusions reached can help in making decisions on public policies that encourage entrepreneurship among a group that is increasingly fundamental in society and in the Spanish labor market.

## 2. What is senior entrepreneurship? An analysis of the literature

There is generally a false belief that entrepreneurial activity is an endeavor undertaken mainly by young people (Schøtt, et al., 2017). However, a growing number of authors, such as Fachinger (2019), point out that a society with higher longevity leads to a higher proportion of healthy people who have the human capital, financial resources, and time available to contribute value through entrepreneurial activity.

However, the first problem that is detected when studying the field of senior entrepreneurship is that there is no single definition of the phenomenon, in the sense of at what age an entrepreneur should be considered a senior. Schøtt, et al. (2017) distinguish between four segments of entrepreneurs according to age: young entrepreneurs (18 to 29 years), mid-aged entrepreneurs (30 to 49 years), senior entrepreneurs (50 to 64 years) and older entrepreneurs (65 to 80 years).

In this sense, authors such as Tornikoski, et al. (2012) and Torres, Leporati & Roses (2020) consider senior entrepreneurs to be those who are at least fifty-five years old. Other authors such as Ahmad, et al. (2014) consider the age limit to be forty years old, while Figueiredo & Paiva (2018) consider the age limit to be forty-five years old. Azoulay, et al. (2020) show, for their part,

that entrepreneurs who create high-growth companies and in technology sectors are on average approximately forty-five years old.

However, despite these discrepancies, there does seem to be some consensus in the literature to consider people who start an entrepreneurial activity from the age of fifty onwards as senior entrepreneurs (Kautonen, 2013; Maâlaoui, et al., 2013; Clegg & Fifer, 2014; Isele & Rogoff, 2014; Červený, Pilková & Rehák, 2016; Schøtt et al., 2017; Biron & St-Jean, 2019; OECD, 2019; Soto-Simeone & Kautonen, 2020).

These discrepancies in the definition of senior entrepreneurship are a sign of the importance that the study of this area of entrepreneurship, which is becoming increasingly important in society, is acquiring. In this regard, Biron & St-Jean (2019) point out that there is a growing interest in senior entrepreneurship, with 60% of the publications analyzed in this field dating from after 2012.

Beyond the definition of senior entrepreneurship, an increasing number of authors are addressing their research on the unique characteristics of this group of entrepreneurs. Lévesque & Minniti (2006) indicate that young professionals are more likely to be entrepreneurial than older ones, partly because the profitability of an entrepreneurial project is of a long-term nature, as income is not received instantaneously. Schøtt et al. (2017) indicate, on the other hand, that older professionals have less confidence in their own abilities when undertaking an entrepreneurial project, pointing out that there is a strong reduction in entrepreneurial intention in people over the age of fifty, with senior professionals being half as likely to be entrepreneurial compared to middle-aged professionals, while older professionals are half as likely to be entrepreneurial as senior professionals. This is even though risk appetite is higher among older people. In this line, however, Kautonen, et al. (2015) point out that if an individual perceives positively that they have entrepreneurial potential in relation to their age, they are more likely to start a business project. Despite this, authors such as Biron & St-Jean (2019) claim that entrepreneurship would be exercised by senior professionals who defy their age, given that entrepreneurial activity requires the investment of energy and a significant dose of optimism in a discontinuous process.

On the one hand, the experience accumulated by senior professionals is a fundamental capacity for the success of the project. Baron & Ensley (2006) point out that pattern recognition is a key factor in recognizing business opportunities, with the experience of entrepreneurs being fundamental. Likewise, Ucbasaran, et al. (2009) point out that the ability to detect market opportunities and exploit innovative opportunities with high potential for adding value is greater in entrepreneurs with previous entrepreneurial experience. However, there are also authors who relegate previous experience to other important factors. For example, Zapkau, et al. (2015) conclude that attitude, subjective norms and perceived control behavior in relation to starting a business project are more important factors in predicting entrepreneurial intention than the entrepreneur's prior experience. Likewise, Kabo (2020) indicates that there is a relationship between financial literacy and the rate of entrepreneurship among older adults both across the life course and in shorter time frames. Kabo (2020) highlights the importance of financial literacy in more senior professionals, as he does not find this relationship to be significant among young adults, who have other education.

In fact, Soto-Simeone & Kautonen (2020) conclude from their analysis that in the case of senior entrepreneurs who start their project in adverse conditions, the important motives for entrepreneurship are of a non-financial nature, such as the search for autonomy. Gimmon, Yitshaki & Hantman (2018) highlight that among the factors that increase the rate of senior entrepreneurship, those related to self-fulfillment increased personal wellbeing and the enhancement of personal interests. In addition, income above the level needed to make ends meet does not seem to be an important motive for entrepreneurship. Červený, Pilková & Rehák (2016) note, in this regard, that recognition of opportunities, experience and confidence in one's own skills are equally significant in senior and non-senior entrepreneurs, while fear of failure is slightly lower in senior entrepreneurs than in the general population. In this regard, they point out that demographic characteristics such as age, gender, occupation, education, and income are factors that influence senior entrepreneurship, especially in the case of income and education.

The OECD (2019) reports interesting results in this area. On the one hand, in the European Union, senior professionals aged 50–64 are more likely to be self-employed compared to the adult population (aged 15–64), with a higher rate of self-employment, showing an increasing trend between 2002 and 2018 even in the older age group (65– 74). However, only 2.6% of European

50–64-year-olds were engaged in nascent entrepreneurship between 2014 and 2018, compared to 4% of the European adult population and 4.7% of 50–64-year-olds in the OECD. Also, in the period 2014–2018, 40.2% of European senior professionals claimed to have the skills and knowledge to be entrepreneurial, lower than the OECD average (44%).

Finally, studies such as Wainwright & Kibler (2013) show the relationship between entrepreneurship and retirement, examining how households and individuals manage pension shortfalls by developing "retirement" businesses.

In order to understand the state of the art in the literature on senior entrepreneurship, Table 1 presents the main contributions that have been reviewed in this field. It can be seen that a significant number of studies have been located in the United States, the United Kingdom or Europe, together with studies of various specific European countries or developing economies. However, there are not many studies focused on the Spanish case.

**Table 1: Contributions to the senior entrepreneurship literature**

| Authors | Year | Scope |
|---|---|---|
| Aggarwal, 'Z' Holly & Wadhwa | 2013 | United States |
| Al-Jubari & Mosbah | 2021 | Malaysia |
| Azoulay, Jones, Kim & Miranda | 2020 | United States |
| Bailey & Dave | 2019 | United States |
| Blid | 2018 | Romania |
| Červený, Pilková & Rehák | 2016 | Eastern and Western Europe |
| Costa | 2020 | Portugal |
| Dgheim & Saad | 2019 | Lebanon |
| Dibek & Aydin | 2020 | Theory |
| Fachinger | 2019 | Europe |
| Fernández-López, et al. | 2022 | OECD |

| | | |
|---|---|---|
| Figueiredo & Paiva | 2018 | Portugal |
| Garcia-Lorenzo, Sell-Trujillo & Donnelly | 2020 | United Kingdom |
| Gimmon, Yitshaki & Hantman | 2018 | Israel |
| Gray & Lawton | 2020 | United Kingdom |
| Halvorsen | 2021 | Nordic countries (Denmark, Finland, Iceland, Norway, Sweden) |
| Halvorsen & Chen | 2019 | United States |
| Hessels & van der Zwan | 2019 | Australia |
| Iolanda, Butnaru & Butnaru | 2020 | Europe |
| Isele & Rogoff | 2014 | Theory |
| Kautonen, Tornikoski & Kibler | 2011 | Finland |
| Kautonen | 2012 | Europe |
| Kautonen, Kibler & Minniti | 2017 | United Kingdom |
| Kerr & Armstrong-Stassen | 2011 | Canada |
| Kerr | 2017 | Canada |
| Kurek & Rachwal | 2011 | Europe |
| Lafuente & Vaillant | 2013 | Romania |
| Lévesque & Minniti | 2006 | Theory |
| Lévesque & Minniti | 2011 | Several countries from different geographies |
| Linardi & Costa | 2021 | Europe |
| Liñán & Santos | 2011 | Several countries from different geographies |
| Lorrain & Raymond | 1991 | Canada |
| Maâlaoui, et al. | 2013 | France |
| Maalaoui, et al. | 2022 | France |
| Maritz | 2015 | Australia |
| Matricano | 2018 | Italy |

| | | |
|---|---|---|
| Martin & Omrani | 2019 | Europe |
| Min & Hock | 2021 | Malaysia |
| Minola, Criaco & Obschonka | 2016 | European Union |
| Oelckers | 2015 | Theory |
| Partouche-Sebban & Maâlaoui | 2019 | Theory |
| Perez-Encinas, et al. | 2021 | Spain, Sweden and France |
| Pilková & Rehák | 2017 | Europe |
| Pilkova, Holienkaa, & Rehak | 2014 | Europe |
| Ratten | 2018 | Theory |
| Römer-Paakkanen & Takanen-Körperich | 2022 | Finland, Germany and Sweden |
| Socci, Clarke & Principi | 2020 | Bulgaria, Denmark, England, France and Spain |
| Solinge | 2014 | Netherlands |
| Soto-Simeone & Kautonen | 2021 | United Kingdom |
| Stirzaker & Galloway | 2017 | United Kingdom |
| Stirzaker, Galloway & Potter | 2019 | United Kingdom |
| Stypinska, Franke & Myrczik | 2019 | Poland |
| Stypinska | 2017 | Europe |
| Villegas-Mateos & Morós-Espinosa | 2018 | Several countries from different geographies |
| Wainwright & Kibler | 2014 | United Kingdom |
| Weber & Schaper | 2003 | Australia |
| Weller, et al. | 2016 | United States |
| Wickstrøm, Klyver & Cheraghi-Madsen | 2020 | OECD |
| You & Lee | 2021 | South Korea |
| Zhang & Acs | 2018 | United States |
| Zhu, et al. | 2022 | China, |

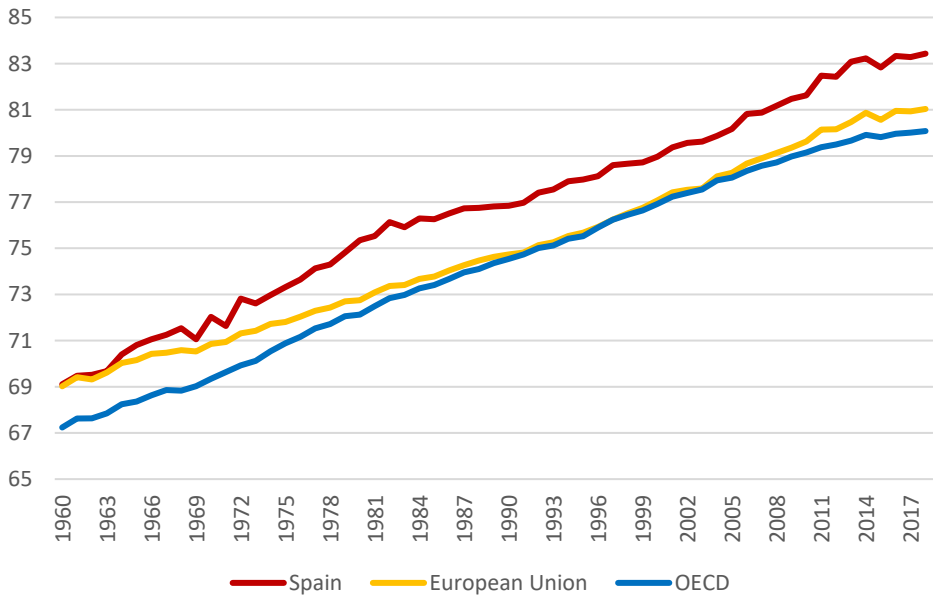
| | | |
|---|---|---|
| | | India and Turkey |
| Zissimopoulos & Karoly | 2005 | United States |

**Source: Own elaboration**

## 3. Senior entrepreneurship in Spain: Entrepreneurship out of necessity or opportunity?

Within the context of increased longevity, Spain has become one of the countries with the highest life expectancy in the world. In order to illustrate this phenomenon, and adequately understand the context in which this work is framed, Graph 1 shows the evolution of life expectancy in the OECD countries, the European Union and Spain, the latter being the paradigm of a European country that is one of the countries in the world with the highest life expectancy at birth and which has seen its life expectancy increase more sharply than the European Union and the OECD. It is also noteworthy that the countries of the European Union maintain a higher life expectancy than the OECD average, partly explained by the development of the Welfare State which characterizes the economic and social structure of European countries.

**Graph 1. Life expectancy at birth in the OECD, European Union and Spain.**

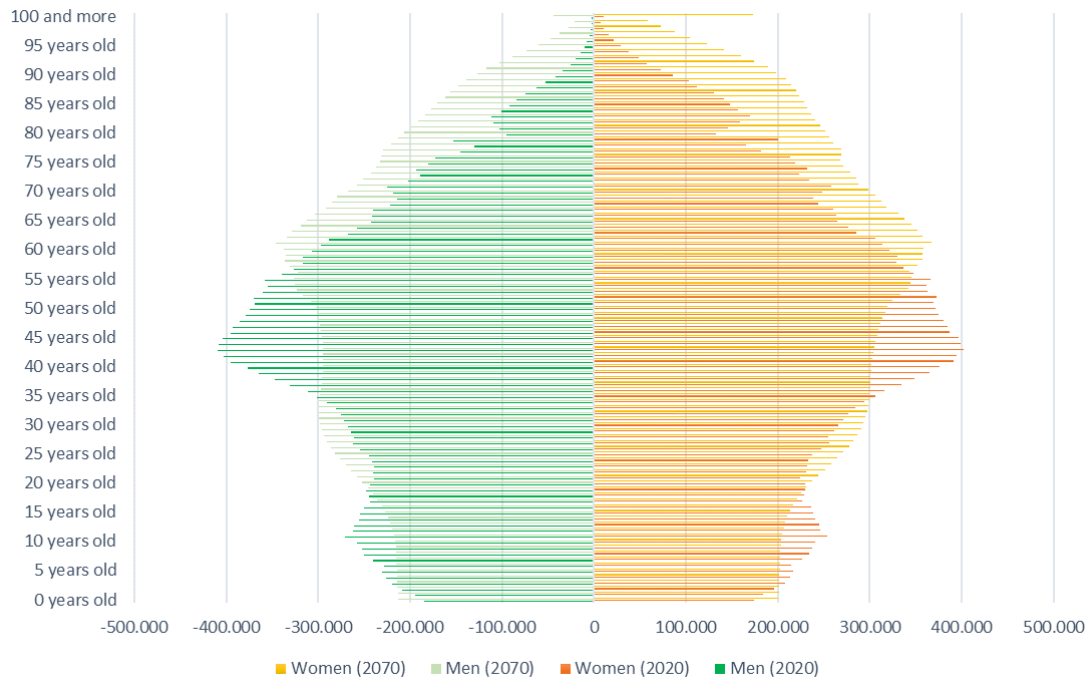



**Source: World Bank data**

This increased longevity is also reflected in the evolution of the population pyramid, with older age groups taking on an increasingly prominent role. Thus, in the OECD, while in 1950 the population aged 50 and over accounted for 21% of the total, by 2020 this percentage had risen to 39%, with an increase of up to 47% expected by 2100 if demographic trends continue.

The case of Spain is, once again, illustrative of this trend. As can be seen in Graph 2, the population pyramid is immersed in a continuous process of longevity. In fact, while in 2020 the population aged 50 and over will account for 40.6% of the total population, in 2070 this percentage will have risen to 48.7% if the current demographic trend continues.

**Graph 2. Spain's population pyramid (2020 and 2070).**

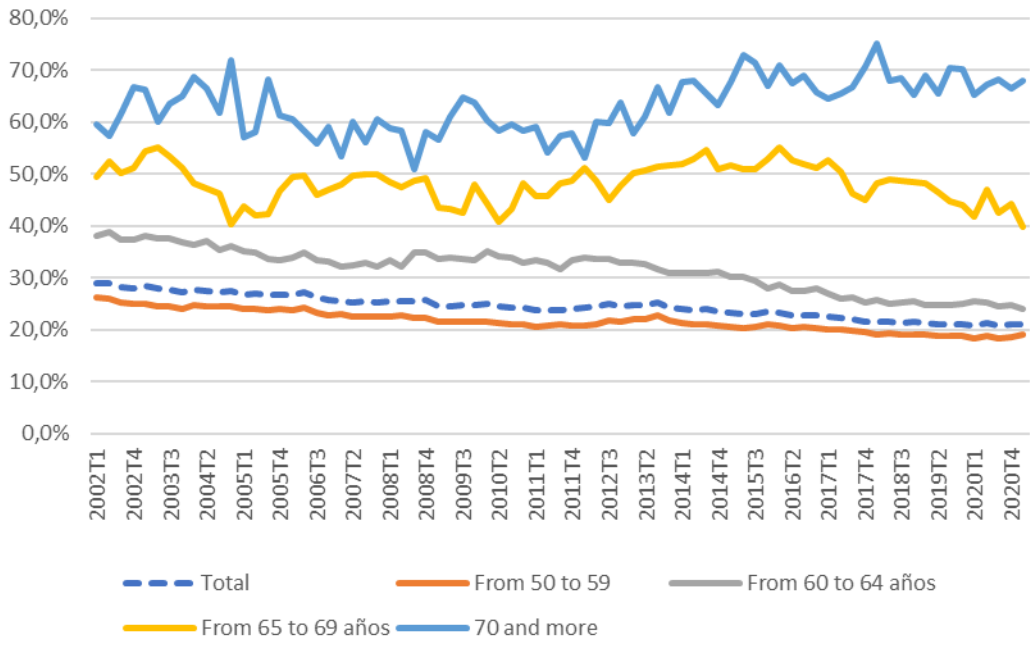



**Source: Spanish Statistical Office data**

As Gratton & Scott (2016) point out, the growing relevance of the senior segment of society should be a consolidated trend that is complemented by increased longevity and an increasingly complex and changing work environment. Therefore, the importance of the senior group within an increasingly ageing society is clear, and there is also a coexisting concern about the activity of this group. In fact, data from the last two decades show that the activity of the senior population has only increased, having grown by 116% between 2002 and 2021. However, it is also true that, within the senior group, the segment of the population in this age group that is unemployed is the one that has grown most intensely, most of them feeding long-term unemployment, with the unemployed senior group having grown by 277% between 2002 and 2021, due to the strong impact of the 2008 crisis, which had a particular impact on this group of professionals.

Despite this dramatic reality, from an employment perspective, senior professionals who have decided to start their own business project stand out. In fact, as shown in Graph 3, the proportion of entrepreneurs out of the total number of employed professionals increases as the age ranges increase, showing the entrepreneurial dynamism that exists among more experienced professionals.

**Graph 3. % Entrepreneurs / total employed by age.**




**Source: Spanish Statistical Office data**

This is partly explained by the fact that, as Skirbekk (2003) points out, in jobs where experience and communication skills are important, senior professionals maintain a relatively high level of productivity, which also leads them to detect entrepreneurial opportunities more easily.

However, entrepreneurship should also be considered as a way out of the high unemployment rates suffered by this group of professionals, who are often the target of redundancy plans, redundancies, or layoffs in the private sector, especially in times of economic crisis.

Given the growing importance of the group of unemployed senior professionals in Spain, the question arises as to whether entrepreneurship is a decision based on the detection of

opportunities in the market or whether it is really due to the lack of professional alternatives and, ultimately, a way out of unemployment. In this sense, Aceytuno, Sánchez-López & Paz-Báñez (2020) study, for the case of Spain, the relationship between entrepreneurship and inequality in an environment of economic recession, concluding that inequality can negatively affect entrepreneurial activity. Likewise, Giacomin, et al. (2011) conclude that not all professionals seeking employment are entrepreneurs out of necessity. On the other hand, Grigorescua, Pîrciogb & Lincarub (2020) find that unemployment boosts the rate of self-employment for professionals with low levels of education.

The aim of this section is to develop a study to explore this area further and to provide evidence to help answer this question.

**3.1 Study hypotheses**

The work is based on the study of a series of hypotheses that allow understanding the profile of senior entrepreneurs in Spain.

Firstly, and in relation to the sector of activity, it is expected that the highest rate of senior entrepreneurship will be located in the service sector. As Socci, Clarke & Principi (2020) point out, social entrepreneurship (which is directly related to active aging) involves the supply of goods and products that can lead to the creation of companies, which in turn implies a series of competencies such as leadership or critical vision. Likewise, authors such as Kerr (2017) highlight the importance of the service sector in later-life entrepreneurs. Therefore:

H1: The rate of social entrepreneurship is higher in the service sector, specifically commercial distribution.

Secondly, whether the senior professional is married or not and the professional status of the partner are considered as important characteristics. As Gimmon, Yitshaki & Hantman (2018) point out, family support is an important factor in entrepreneurial intentions. In fact, authors such as Zissimopoulos & Karoly (2005), Solinge (2014), Kerr (2017), Zhang & Acs (2018), Hessels

& van der Zwan (2019) and Maalaoui, et al. (2022) consider marital status as an important variable when understanding the entrepreneurial intentions of senior professionals. It is relevant in the case of Perez-Encinas, et al. (2021), who delve into the importance of the couple factor by analyzing whether the couple has managed a business or not.

H2: The propensity to entrepreneurship in advanced ages increases if in the case of married professionals whose partner is also an entrepreneur.

The educational factor is considered fundamental in the literature on senior entrepreneurship, considering entrepreneurial activity more likely among professionals with higher qualifications or years of education, as highlighted by studies such as those of Zissimopoulos & Karoly (2005), Červený, Pilková & Rehák (2016), Zhang & Acs (2018) and Wickstrøm, Klyver & Cheraghi-Madsen (2020).

Other studies, such as those of Fernández-Lopez, et al. (2022), conclude that education is a related, but not significant factor in the case of higher education for the case of senior entrepreneurs. In this sense, the hypothesis to be contrasted is:

H3: Higher levels of education increase the propensity to entrepreneurship among senior professionals.

Given that the literature analyzed measures educational level from two points of view: educational level attained or years of study (which includes continuing professional development training beyond formal education), the hypothesis will be contrasted by analyzing two variables: educational level attained and maximum age with completed studies.

The gender of professionals is also an important variable in the intention of entrepreneurship by senior professionals, as shown, among others, by the studies of Červený, Pilková & Rehák (2016),

Zhang & Acs (2018), Hessels & van der Zwan (2019), Iolanda, Butnaru & Butnaru (2020), Fernández-Lopez, et al. (2022), Maalaoui, et al. (2022), Maalaoui, et al. (2022).

Having or not having children, which is a variable that sometimes conditions the decision more in women than in men, is a factor also studied in the literature, as are the examples of Zhang & Acs (2018), Hessels & van der Zwan (2019) or Maalaoui, et al. (2022), among others.

Therefore, in this study it has been decided to unite both perspectives in the hypothesis to be tested, so that:

H4: Women and men with children have a greater propensity to start a business at an advanced age. Among both sexes, men have a greater propensity to start a business than women.

On the other hand, although we are talking about senior professionals, age continues to be a conditioning factor in the motivation to become an entrepreneur, since it is not the same to become an entrepreneur at an age close to retirement as it is to do it before. In this sense, the literature has also focused on age as a variable to be included in the analyses, as shown by the contributions of authors such as Červený, Pilková & Rehák (2016), Zhang & Acs (2018), Iolanda, Butnaru & Butnaru (2020), Wickstrøm, Klyver & Cheraghi-Madsen (2020), Maalaoui, et al. (2022), Fernández-Lopez, et al. (2022). Of particular note is the case of Zissimopoulos & Karoly (2007), who distinguish between professionals aged between 51–55, between 56–61 and between 62–67. In this line, the hypothesis to be tested is:

H5: The older the age, the greater the propensity to undertake entrepreneurial activity among senior professionals.

On the other hand, the growing importance of immigration in Spanish society makes it necessary to study the nationality factor as a driver of entrepreneurship, as authors such as Naudé, Siegel & Marchand (2017) point out. Therefore, the hypothesis to be tested is:

H6: There are no significant differences between Spanish senior professionals and those of other nationalities in the intention to undertake entrepreneurial activity.

Likewise, authors such as Blid (2018) or Pilková & Ján Rehák (2017) emphasize the importance of studying senior entrepreneurship at the regional level. That is why, in a strongly decentralized country like Spain, the regional aspect also acquires importance.

Therefore, a hypothesis to be contrasted is whether regional differences in terms of senior entrepreneurship are significant or not, considering that the literature has highlighted the importance of Spanish regions in active aging (Rodriguez-Rodriguez, et al., 2017).:

H7: There are significant differences at the regional level in the.

On the other hand, when talking about a part of the population close to retirement age, the importance of retirement cannot be overlooked. In Spain, the literature has highlighted the need to continue reforming the system in the long term, despite the reforms carried out in recent years (Meneu, et al., 2018; Alonso-García & Rosado-Cebrian, 2021).

However, the reforms implemented in 2011 and 2013 brought about very important changes in the pension system. Thus, the 2011 reform introduced changes in the replacement rate and in the period for calculating pensions, the delay in the retirement age and a transition period was established (Conde-Ruiz & González, 2016).

On the other hand, the 2013 reform introduced two system adjustment factors: the sustainability factor, which linked new pensions to the evolution of life expectancy; and the annual pension revaluation factor, linked to the evolution and sustainability of the system (Solé, Souto & Patxot, 2019).

This is why these reforms are considered to have influenced the entrepreneurial decisions of senior professionals who decided to change their professional career or who were forced to do so. Therefore, the hypothesis to be contrasted is the following:

H8: The reforms of the public pension system cause an increase in senior entrepreneurship, due to the need to lengthen professional activity in order to reach an adequate level of pension in retirement.

Finally, a fundamental aspect is whether, in Spain, senior entrepreneurship is due to opportunities detected in the market by experienced professionals or, on the contrary, to the need for entrepreneurship as a means of subsistence in the face of the threat of unemployment.

The literature on senior entrepreneurship considers the level of unemployment as an important factor. Martin & Omrani (2019) point out that low salaries and employment expectations among the senior collective would encourage professionals to undertake entrepreneurship. Likewise, and in this regard, Zhang & Acs (2018) point out that the unemployment rate is directly associated with necessity entrepreneurship. Therefore, this paper aims to test the following hypothesis:

H9: Senior entrepreneurship is entrepreneurship by necessity, so that higher unemployment rate implies higher propensity to entrepreneurship.

To test this hypothesis, on the one hand, we will use the growth rate of the unemployment rate of professionals aged 55 and over, since it allows us to understand how unemployment is evolving in this group, assuming that in Spain senior entrepreneurship is an entrepreneurship by necessity, given the high level of unemployment in the population aged 55 and over, which leads senior professionals to undertake entrepreneurship.

However, given the idiosyncrasies of the Spanish labor market in which not only unemployment as such must be considered, but also the duration of unemployment (Bentolila, García-Pérez &

Jansen, 2017), since the senior group is one of those most affected by long-term unemployment, the hypothesis will be tested through the growth of the long-term unemployment rate, assuming that senior entrepreneurship is a necessity entrepreneurship.

In this way, the study continues the line of research of other authors such as Audretsch, Dohse & Niebuhr (2015), who not only consider interregional differences in the unemployment rate, but also duration.

### 3.2 Sample analysis and methodology

In order to obtain an adequate sample to analyze the socio-demographic characteristics of Spanish senior entrepreneurs and to test the hypotheses put forward, we used the microdata files of the Labour Force Survey published by the National Statistics Institute.

The Labour Force Survey is addressed quarterly to a sample of approximately 65,000 dwellings throughout Spain, obtaining information on all household members, despite the fact that the questionnaire is completed by only one person in the dwelling (Garrido, Requena & Toharia, 2000). Therefore, information is not only available on the person who completes the survey (reference person) but also on all members of the household, increasing the availability of socio-demographic information.

Based on this source of information, the study focuses on reference persons who, being 50 years of age or over and actively working, work as an entrepreneur and have started their activity in the last 12 months, as opposed to reference persons who, being 50 years of age or over and actively working, work as an employed person (public or private) and who have started to work in this activity in the last 12 months. The study covers, in turn, the analysis period of the fourth quarters from 2005 to 2020. Thus, the sample used is made up of a total of 11,462 records, of which 1,257 refer to senior entrepreneurs who have started their projects in the last 12 months.

On the other hand, in relation to the methodology, conditioned by the nature of the variable to be explained and the data used, the work focuses on the use of binary logistic regression

techniques, given that the phenomenon to be studied is binary in nature: entrepreneurship (value 1) or not (value 0) of senior professionals.

In this way, the probability of belonging to one or the other state is obtained based on independent variables of a socio-demographic nature. In a simplified form and assuming a single independent variable, the model can be represented as follows:

$$Prob(Y = 1|x) = P_i = \frac{e^{\beta_0+\beta_1 x_i}}{1 + e^{\beta_0+\beta_1 x_i}} = \frac{1}{1 + e^{-(\beta_0+\beta_1 x_i)}}$$

The methodology based on logistic regression is common in the study of entrepreneurial activity (e.g. Liñán, Santos & Fernández, 2011; López & García, 2012; Iolanda, Butnaru & Butnaru, 2020; Devianto, Maryati & Rahman, 2021) and, particularly, in the study of the group of senior entrepreneurs (Červený, Pilková & Rehák, 2016; Halvorsen & Chen, 2019; Linardi & Costa, 2021).

### 3.3 Variables

Having described the sample and the methodology according to the sample structure, this section defines the dependent variable and the independent factors used in the development of the models.

Firstly, the dependent variable reflects, in a dichotomous manner, the event undertaken by a senior professional:

- 1: Reference person who, being 50 years of age or older, has been in business for less than twelve months.

- 0: Reference person who, being aged 50 or over, has been in a non-entrepreneurial professional activity (public or private) for less than 12 months.

Entrepreneurs are those persons aged 50 years old or over who have a business, regardless of whether or not they generate employment, considering the data of the reference person in the household to construct this variable.

In relation to the independent variables, on the one hand, the socio-demographic variables considered in the models were as follows:

- Sector of activity: Categorical variable indicating the sector of activity:

  - Primary: The agriculture, livestock, forestry and fishing sectors are included (CNAE-09 codes: 01, 02 and 03).
  - Industrial and construction: This includes the sectors of the food, textile, leather, wood and paper industry (CNAE-09 codes: 10 to 18), the extractive industries, oil refining, chemical industry, pharmaceuticals, rubber and plastic materials industry, electrical energy supply, gas, steam and air conditioning, water supply, waste management, metallurgy (CNAE-09 codes: 05 to 09, 19 to 25, 35 and 36 to 39), as well as the sectors of the construction of machinery, electrical equipment and transport material. Industrial installation and repair (CNAE-09 codes 26 to 33).
  - Also included in this category are construction activities (CNAE-09 codes 41 to 43).
  - Commercial distribution services: This includes service activities relating to wholesale and retail trade and its installations and repairs, automobile repair and hotel and catering (CNAE-09 codes: 45 to 47, 55 and 56).
  - Other services: These include transport and storage services, information and communications (CNAE-09 codes 49 to 53 and 58 to 63), financial intermediation, insurance, real estate activities, professional, scientific, administrative and other services (CNAE-09 codes 64 to 66, 68, 69 to 75 and 77 to 82), Public Administration, education and health activities (CNAE-09 codes 84, 85 and 86 to 88), as well as other services (CNAE-09 codes 90 to 93, 94 to 96, 97 and 99).

- Existence or non-existence of a spouse in the family household and, in the case of existing, employment held: Categorical variable constructed based on the data relating to the spouse of the main person, according to the kinship relationship with the reference

person reported by the Economically Active Population Survey, taking the following values:

- Does not have a spouse: The reference person does not live with a spouse in the dwelling.
- Does not work: The reference person has a spouse but said person does not have a paid professional activity.
- Salaried spouse: The spouse of the reference person has a paid professional activity and receives a salary from the public or private sector.
- Self-employed: The spouse of the main person has a self-employed activity, whether entrepreneurial or otherwise as a member of a cooperative or assisting in a family business.

- Level of education of the senior entrepreneur: Categorical variable indicating the level of education attained by the reference person. It takes the following values:

- Illiterate: if the reference person does not have any degree of regulated studies.
- Unfinished primary studies: the reference person began basic studies, but did not complete them.
- Primary education: if the reference person has completed primary education.
- First stage of secondary education: The reference person has completed the first stage of secondary education.
- Upper secondary education. General orientation: The reference person has secondary education studies, having completed the second stage of secondary education with general orientation.
- Second stage of secondary education. Vocational orientation: The reference person has a secondary education, having completed the second stage of secondary education with vocational orientation.
- Higher education: The reference person has higher education.

- Nationality of the reference person: Variable indicating whether the person has Spanish nationality or dual nationality or, on the contrary, has foreign nationality.

- Sex and children: Dichotomous variable that indicates whether the reference person is male or female and whether he/she has children. It takes the following values:

  - Man with children
  - Man without children
  - Woman with children
  - Woman without children.

- Age of the reference person: Dichotomous variable that indicates the age interval of the reference person, taking the following values:
  - From 50 to 55 years
  - From 55 to 60 years
  - From 60 to 65 years
  - 65 years and over.

- Maximum age of studies: Continuous variable indicating the age at which the reference person reached his/her maximum level of studies. It is an indicative variable of the existence or not of continuous training. If the value is absent, the minimum age of the distribution is assumed (seven years).

- Region: variable that is divided into the following groupings:
  - South and Canary Islands (Andalusia, Region of Murcia, Autonomous City of Ceuta, Autonomous City of Melilla and Canary Islands)
  - Community of Madrid
  - East (Catalonia, Valencian Community and Balearic Islands)
  - Northwest (Galicia, Principality of Asturias and Cantabria)
  - Northeast (Basque Country, Community of Navarre and La Rioja)
  - Centre (Castilla and Leon, Castilla-La Mancha and Extremadura).

- Reform of the public pension system: Dichotomous variable defined as:
  - 1: Social Security reforms of 2011 and 2013
  - 0: Remaining years in which there has been no reform of the Social Security system.

The distribution of the variables can be seen in Table 2. Table 2 shows the share of the total sample of senior professionals that falls into each category versus the number of senior entrepreneurs in the same category, so that the rate of senior entrepreneurship can be understood for each category of the variables studied. Likewise, it can be observed that the highest rate of entrepreneurship among the senior group is in the commercial distribution sector, while very similar rates are observed between the primary sector and the industrial and construction sectors.

Likewise, within the group of senior professionals, men with children show a higher rate of entrepreneurship (12.4%). From an age perspective, it is very interesting to note that the highest propensity for entrepreneurship is found among professionals over 65 years of age (22.4%). This is interesting considering that this is the group of professionals of retirement age, which may be paradigmatic. On the other hand, the most entrepreneurial professionals are Spaniards or dual nationals compared to foreigners, although with a slight difference (11% compared to 10%). From a training perspective, it is professionals with higher education who show the greatest propensity to be entrepreneurial (17.3%), followed by professionals who have reached the second stage of secondary education, with a general orientation (16%). Likewise, the median age of studies attained is 15 years, compared to an average of 18.27 years. In relation to marital status, married professionals (12%) and those who also have a spouse who is also self-employed (32%) show a greater propensity for entrepreneurship, which suggests that they are couples who share a business or, at least, a similar culture oriented towards entrepreneurship.

Finally, there is a greater propensity to be entrepreneurial in the years in which a reform of the public Social Security system has been carried out (2011 and 2013) than in the rest of the years (13% compared to 11%).

## Table 2: Distribution of socio-demographic variables

| Variable category | Category | Total | Entrepreneurs | Entrepreneurship rate |
|---|---|---|---|---|
| **Sector** | Sector other services | 5.062 | 361 | 7.1% |
| | Commercial distribution services | 2.221 | 488 | 22.0% |
| | Industry and construction | 3.024 | 294 | 9.7% |
| | Primary sector | 1.155 | 114 | 9.9% |
| **Employment spouse self-employed** | Self-employed | 637 | 205 | 32.2% |
| | No spouse | 3.912 | 349 | 8.9% |
| | With salary | 3.104 | 277 | 8.9% |
| | Not working | 3.809 | 426 | 11.2% |
| **Education** | Education illiterate | 112 | 4 | 3.6% |
| | Primary education | 2.425 | 224 | 9.2% |
| | Incomplete primary education | 714 | 40 | 5.6% |
| | Higher education | 1.837 | 318 | 17.3% |
| | Lower secondary education | 4.221 | 384 | 9.1% |
| | Upper secondary education. General orientation | 1.241 | 198 | 16.0% |
| | Upper secondary education. Vocational guidance | 912 | 89 | 9.8% |
| **Nationality** | Spanish nationality and dual nationality | 11.069 | 1.208 | 10.9% |
| | Foreign | 904 | 91 | 10.1% |
| **Gender and children** | 1.Male_1.SI | 4.248 | 526 | 12.4% |

| | | | | |
|---|---|---|---|---|
| | 1.Male_2.NO | 2.627 | 313 | 11.9% |
| | 2.Female_1.SI | 2.614 | 246 | 9.4% |
| | 2.Female_2.NO | 1.973 | 172 | 8.7% |
| **Age** | 50 to 55 years old | 6.170 | 656 | 10.6% |
| | 55 to 60 years old | 3.621 | 371 | 10.2% |
| | 60 to 65 years old | 1.461 | 183 | 12.5% |
| | More than 65 years old | 210 | 47 | 22.4% |
| **Region** | South and Canary Islands | 3.337 | 336 | 10.1% |
| | Community of Madrid | 580 | 72 | 12.4% |
| | East | 2.471 | 311 | 12.6% |
| | Northwest | 1.718 | 207 | 12.0% |
| | Northeast | 982 | 113 | 11.5% |
| | Centre | 2.374 | 218 | 9.2% |
| **Reform of the public pension system** | 0 | 10.308 | 1.110 | 10.8% |
| | 1 | 1.154 | 147 | 12.7% |
| | **Average** | **Estandar Desviation** | **Median** | |
| **Maximum age of studies** | 18.27988135 | 8.506263908 | 15 | |

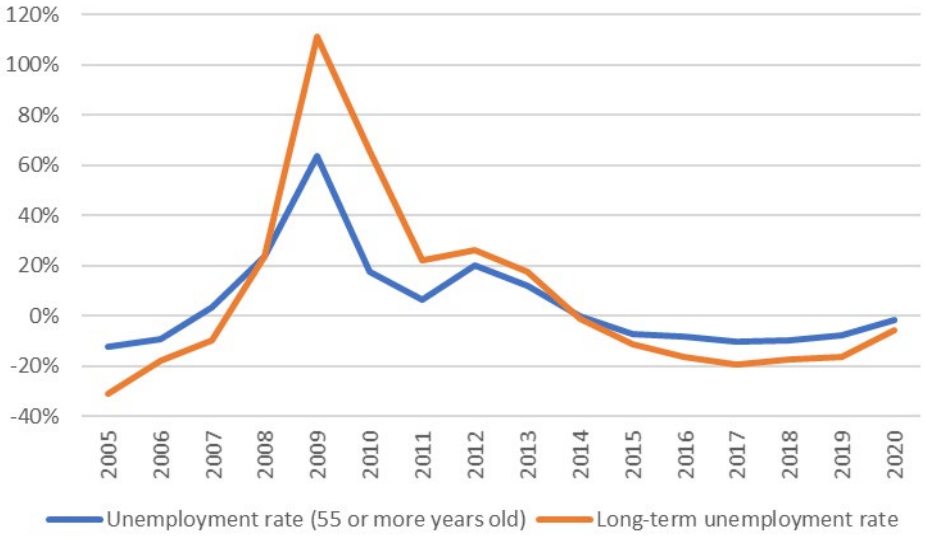
**Source: Own elaboration. Data from LFS Microdata.**

Finally, in relation to the variables that will be used to test the hypotheses related to entrepreneurship by necessity, the year-on-year change in the unemployment rate of the population aged 55 and over and the year-on-year change in the long-term unemployment rate will be used, associating the data with everyone in the sample according to the Autonomous Community in which they work (self-employed or employed). Graph 4 shows its evolution over the proposed period.

Thus, both macroeconomic series follow a similar trend, characterized by a sharp increase in the unemployment rate in the years of economic crisis, from 2008, to fall continuously between 2014 and 2020. It is also noteworthy that, despite the severe crisis resulting from the measures implemented to tackle the COVID-19 pandemic, the unemployment rates shown have not increased significantly, mainly since the measures implemented include bankruptcy

moratoriums, unemployment benefits for the self-employed and the use of Temporary Redundancy Proceedings (ERTEs).

**Graph 4: Unemployment rate of the population aged 55 and over and long-term unemployment rate (1 year or more unemployed)**

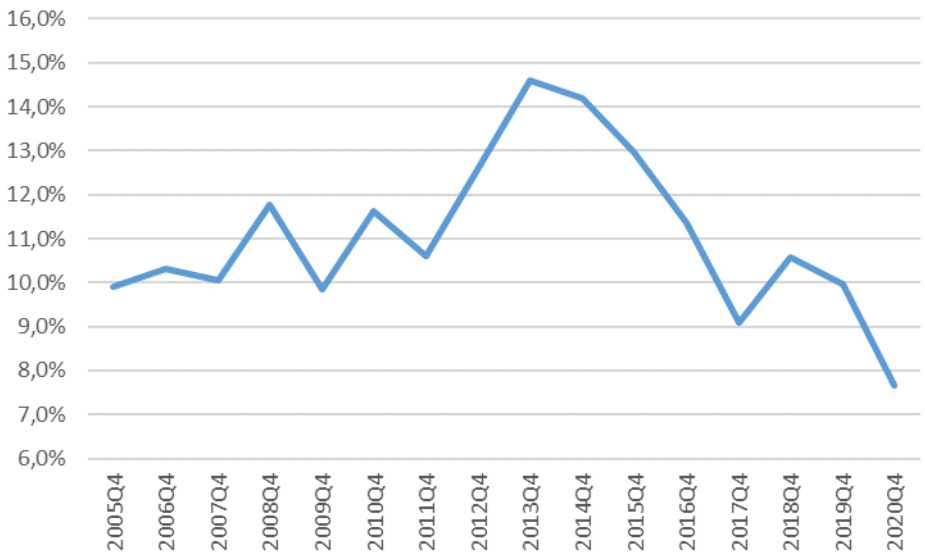



**Source: Spanish Statistical Office Data (LFS).**

### 3.4 Results

Before analyzing the results of the model, it is convenient to understand the distribution of the sample used in the analyses, so that Graph 5 shows the evolution of the rate of senior entrepreneurship in Spain over the period studied.

**Graph 5: Evolution of senior entrepreneurship in Spain**

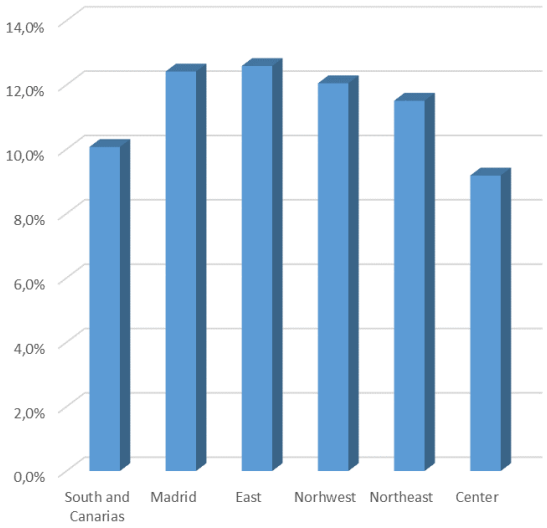



**Source: Own elaboration. Data from LFS Microdata.**

As can be seen in Graph 6, the rate of senior entrepreneurship reaches higher levels in the contractionary stages of the economic cycle, with an average rate of 11%. It is also interesting to note that in 2019 it maintained a similar percentage as in 2005. Finally, contrary to what was observed in the 2008 crisis, the crisis resulting from the COVID-19 pandemic has led to a reduction in the rate of entrepreneurship among senior professionals, at least during the first year of the pandemic.

Likewise, from a regional perspective, it can be seen in Graph 6 how there seems to be some heterogeneity between the different regions in the propensity to entrepreneurship of senior professionals, considering the period analyzed.

**Graph 6: Senior entrepreneurship rates by region (NUT) 2005–2020**




**Source: Own elaboration. Data from LFS Microdata.**

Thus, the highest propensity to entrepreneurship among senior professionals is observed in the Eastern region and in the Community of Madrid, with the Central region showing the lowest rates of senior entrepreneurship.

On the other hand, from the perspective of the estimates developed, two complete estimations are presented. Thus, each estimate shown in Table 4 contains the socio-demographic and public pension reform variables, which allows contrasting of the first hypotheses defined on the socio-demographic profile of Spanish senior entrepreneurs and the importance of other factors such as the sector of activity, the region or the situation of the public pension system, while also including the change in the unemployment rate for people over 55 years of age or the change in the long-term unemployment rate (both corresponding to the region of activity of the reference person).

In this way, the inclusion of the evolution of unemployment will make it possible to understand whether senior entrepreneurship in Spain is due to market opportunities or to the need factor.

Likewise, two unemployment measurement indicators have been included (in two different estimates) to understand if the unemployment situation generates the need to undertake

entrepreneurial activity or if, on the contrary, it is the duration of unemployment that generates said need.

Interestingly, a relationship between entrepreneurial propensity and region is observed in the case of the regional groupings Community of Madrid, East and Northeast, with no statistically significant relationship in the case of South and Canary Islands and Northeast. This leads to not rejecting Hypothesis 7, with differences between regions in terms of propensity for entrepreneurship among senior professionals.

On the other hand, from the point of view of educational level, it is an important variable in the propensity to entrepreneurship, with both models showing that the higher the level of education, the greater the propensity of senior professionals to take risks through entrepreneurial activity. Likewise, the maximum age of studies was not statistically significant, which leads to the intuition that the effect of this variable has been assumed by the educational level itself. Therefore, Hypothesis 3 cannot be rejected if the educational level is taken into account, not the continuous training of professionals. This leads to the intuition, in turn, that senior professionals do not seem to undertake continuous training beyond the completion of official studies.

**Table 4: Models**

| | | Model 1 | | Model 2 | |
|---|---|---|---|---|---|
| **Variable** | **Category** | **Odd ratio** | **Sig.** | **Odd ratio** | **Sig.** |
| Region (Ref=centre) | South and Canary Islands | 1.141 | 0.173 | 1.137 | 0.185 |
| | Community of Madrid | 1.294 | 0.096 | 1.295 | 0.095 |
| | East | 1.312 | 0.006 | 1.303 | 0.008 |
| | Northwest | 1.344 | 0.008 | 1.344 | 0.008 |
| | Northeast | 1.164 | 0.221 | 1.172 | 0.201 |
| Educational level (Ref=higher education) | Second stage of secondary education. General orientation | 0.736 | 0.005 | 0.737 | 0.005 |
| | Second stage of secondary education. Vocational guidance | 0.460 | 0.000 | 0.461 | 0.000 |
| | Primary education | 0.393 | 0.000 | 0.391 | 0.000 |
| | Lower secondary education | 0.397 | 0.000 | 0.397 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| | Incomplete primary education | 0.216 | 0.000 | 0.216 | 0.000 |
| | Illiterate | 0.169 | 0.001 | 0.168 | 0.001 |
| Sector of activity (Ref=Commercial distribution services) | Primary sector | 0.474 | 0.000 | 0.474 | 0.000 |
| | Industry and construction | 0.363 | 0.000 | 0.363 | 0.000 |
| | Other services | 0.256 | 0.000 | 0.255 | 0.000 |
| Age (Ref: more than 65 years old) | 60 to 65 years old | 0.469 | 0.000 | 0.472 | 0.000 |
| | 50 to 55 years old | 0.317 | 0.000 | 0.319 | 0.000 |
| | 55 to 60 years old | 0.319 | 0.000 | 0.321 | 0.000 |
| Sex and children (Ref=Man with children) | Man without children | 0.976 | 0.782 | 0.975 | 0.771 |
| | Woman with children | 0.653 | 0.000 | 0.651 | 0.000 |
| | Woman without children | 0.623 | 0.000 | 0.621 | 0.000 |
| Spouse's employment (Ref=Self-employed) | Not working | 0.272 | 0.000 | 0.272 | 0.000 |
| | With salary | 0.205 | 0.000 | 0.205 | 0.000 |
| | No spouse | 0.226 | 0.000 | 0.225 | 0.000 |
| Marital status (Ref=Married) | Single | 1.036 | 0.788 | 1.042 | 0.753 |
| | Widowed or divorced | 0.972 | 0.809 | 0.974 | 0.827 |
| Nationality (Ref=Spanish or dual nationality) | Foreigner | 0.827 | 0.121 | 0.827 | 0.119 |
| Maximum age at the end of studies | | 1.000 | 0.988 | 1.000 | 0.985 |
| Pension reform (Ref= year of pension reform) | | 0.843 | 0.085 | 0.864 | 0.144 |
| Unemployment rate change 55 years and older | | 1.220 | 0.107 | | |
| Change in the long-term unemployment rate | | | | 1.222 | 0.022 |
| Constant | | 7.210 | 0.000 | 7.036 | 0.000 |

**Source: Own elaboration. Data from LFS Microdata.**

Regarding the sector of activity, both the primary sector and industry/construction or other services are related to a lower propensity to entrepreneurship among the senior group, in relation to commercial distribution services, highlighting that the primary sector leads senior professionals to entrepreneurship with a higher probability when compared to industry/construction or other services. In short, the propensity of senior professionals to undertake entrepreneurial activity is greater in the services sector, mainly commercial distribution, accepting Hypothesis 1.

Also, as age increases, senior professionals are more likely to be entrepreneurial, while being a man and having no children does not seem to be statistically significant in the propensity to be entrepreneurial but being a woman (with or without children) does seem to have a statistically significant relationship with the propensity to be entrepreneurial, although the probability is lower than for men with children. Finally, foreign senior professionals show a lower propensity to be entrepreneurial when compared to Spaniards or dual nationals, although the relationship is not statistically significant. Therefore, Hypotheses 2, 4 and 6 cannot be rejected.

On the other hand, although marital status alone does not have a statistically significant relationship with the propensity to entrepreneurship of senior professionals, it does suggest that having or not having a spouse is important when considering their professional situation, with those senior professionals who have a spouse who is also self-employed (sharing an entrepreneurial culture) having a higher propensity to entrepreneurship, although the propensity of senior professionals whose spouse does not work or who do not have a spouse at all also stands out in second and third place, which may be related to the need to generate income for the family home. In short, Hypothesis 2 cannot be rejected, although marital status alone does not seem to be related to the propensity to undertake entrepreneurial activity in senior professionals.

Finally, it is interesting to observe the effect of public pension reforms with respect to the central hypothesis of this paper, for example the importance of unemployment in the entrepreneurial decision of senior professionals.

Thus, if we consider in the model the reform of the pension system and unemployment among professionals over 55 years of age, we observe that the first variable is statistically significant, showing a lower probability of entrepreneurship in the years in which there is no reform of the pension system compared to the inverse. This is interesting in the sense that the reforms, aimed in recent years at increasing the retirement age, the period for calculating working life or adjusting pensions on the basis of the sustainability of the system or life expectancy, seem to lead to an increase in the propensity to undertake entrepreneurial activity among professionals who are closer to retirement, probably due to the interest in contributing (albeit as a self-employed entrepreneur and not as an employee) to achieve better pension levels at the time of retirement. However, on the contrary, unemployment of senior professionals is not statistically significant in a model where reforms of the public pension system are statistically significant. Therefore, the decision to undertake pension reforms seems to weigh more heavily on the decision to undertake pension reforms than the evolution of unemployment in the senior population. This may be because senior unemployed people often leave their employer with a large severance package that helps them to live without the need to work for a period of time, which leads them to look for paid employment, while unemployment benefits may also deter the decision to take up entrepreneurship and prefer, once again, to look for paid employment. This would lead us not to accept the central hypothesis of necessity entrepreneurship based on the reality of the labor market for senior professionals, but to consider that there is a decision out of necessity to contribute in order to increase pension levels at the time of retirement or to reach the necessary years of contributions.

On the other hand, if we look at the evolution of long-term unemployment, the conclusion is quite the opposite. In this sense, in the case of professionals who have been unemployed for a period, the evolution of the long-term unemployment rate is statistically significant, increasing the propensity to take up entrepreneurship. However, among these unemployed professionals, the reforms in the public pension system do not seem to be related to their propensity to undertake entrepreneurial activity, showing the importance of unemployment as a factor of entrepreneurship by necessity among professionals who have been out of work for a longer period, thus considering this fact in their short-term decision, above their situation as regards retirement (medium or long term).

Therefore, it is detected that the nature of senior entrepreneurship in Spain is out of necessity, although it not only depends on the evolution of the labor market, but also the decision to undertake entrepreneurial activity seems to be conditioned by the reforms on the pension system and by the evolution of unemployment, although depending on its duration.

We must not forget that we are talking about professionals close to retirement age and that, sometimes, maintaining a continuous professional career is a challenge in the face of changes in the environment.

## 4. Conclusion

The increase in longevity in developed countries is a phenomenon that is changing the socio-economic pillars of these countries. The increase in life expectancy, together with the social behaviors that this entails, has effects not only on pension systems, but also on the labor market itself. In fact, the group of senior professionals (those aged 50 and over) will continue to grow in the coming years, steadily increasing their relative importance in the labor market. This fact leads to two intrinsically related realities: on the one hand, there are many companies that unfortunately dispense with their most senior workers through layoffs, voluntary redundancies, or redundancy plans. On the other hand, there are many senior professionals who decide to start a business project as self-employed.

The aim of this paper is twofold. On the one hand, we study the reality of senior entrepreneurship in Spain, a country in which the increase in this segment of the population is particularly important, studying the importance of the regional component of senior entrepreneurship while analyzing the main socio-demographic factors that characterize senior entrepreneurs. On the other hand, we study whether senior entrepreneurial activity in Spain is mainly based on a component of necessity (based on the relative importance of reforms in the public pension system and unemployment among senior professionals) or, on the contrary, is based on the detection of opportunities in the market.

The results obtained through a binary logistic regression analysis show, firstly, the importance of the region in the entrepreneurial decisions of senior professionals in the regions grouped as

Madrid, East and North-West, in line with prior contributions from the literature such as those of Blid (2018) or Pilková & Ján Rehák (2017). Other factors, such as sector of activity, level of education attained (although not further training), age, gender, and the existence of children in the family home and the employment of the spouse, if any (although the marital status or nationality of the professionals themselves was not significant) are also important.

These results are consistent with those produced by previous literature. On the one hand, Kerr (2017) highlights the importance of the service sector in senior entrepreneurial activity. However, the results of the work allow us to conclude that in Spain, commercial distribution services stand out as an opportunity to generate business projects among experienced professionals. On the other hand, and in line with contributions such as those of Perez-Encinas, et al. (2021), senior professionals whose partner is also self-employed are more likely to start a business than other cases. This is due to the support provided by experience in starting up a business, as well as family support as a factor of entrepreneurial motivation (Gimmon, Yitshaki & Hantman, 2018). In fact, the results seem to derive a greater propensity to undertake entrepreneurial activity among senior professionals who have children, regardless of gender, in line with the conclusions reached by other authors, such as Zhang & Acs (2018), Hessels & van der Zwan (2019). or Maalaoui, et al. (2022),

Likewise, and coinciding with the consensus in the literature, a higher educational level is also a factor that drives entrepreneurial activity among senior professionals (Zissimopoulos & Karoly, 2005; Červený, Pilková & Rehák, 2016; Zhang & Acs, 2018; Wickstrøm, Klyver & Cheraghi-Madsen, 2020). In this sense, it is important to highlight that continuous training is not significant in the propensity to undertake entrepreneurial activity, which suggests that senior professionals do not carry out continuous training or that the same it is not related to the entrepreneurial activity or not useful for the activity.

Finally, despite focusing the study on senior professionals, age continues to be an important factor, in line with previous literature (Červený, Pilková & Rehák, 2016; Zhang & Acs, 2018; Iolanda, Butnaru & Butnaru, 2020; Wickstrøm, Klyver & Cheraghi-Madsen, 2020; Maalaoui, et al., 2022; Fernández-Lopez, et al., 2022), so that it is the older professionals with ages closer to retirement who show a greater propensity to undertake entrepreneurial activity.

Likewise, the estimated models allow us to conclude that senior entrepreneurship in Spain has a component of necessity rather than opportunity, but with important differences to be considered depending on the life stage of the professionals. On the one hand, the simple evolution of unemployment does not seem to be related to the decision to become an entrepreneur, probably due to the unemployment benefits or severance payments that professionals with extensive experience in companies obtain and which allow them to look for work comfortably for a period. This leads to the fact that, in the short term, the entrepreneurial decision stems from reforms in the public pension system, leading to the need to pay contributions to access retirement or to increase pension entitlements.

However, from the perspective of the duration of unemployment, the importance of public pension reforms is no longer considered, and the fact of being long-term unemployed is significant. It is, therefore, the need for recurrent income that conditions the decision to start a business.

These conclusions allow progress to be made in the generation of economic policies aimed at the professional reorientation of a group of workers who, due to labor market circumstances, are obliged to end long professional careers and to seek alternatives, not always finding the necessary support for this purpose.

Entrepreneurship is a viable alternative that draws on the accumulated experience of this group of professionals. However, greater support in the form of training and guidance on market needs could gradually transform a reality based on need into one based on the opportunities generated by a constantly changing market.

The main limitations of the study refer to the lack of socio-economic information on the sample. Thus, it would be interesting to know not only the socio-demographic characteristics but also their link with the economic situation of the professionals, as well as the fact of whether they have started from a previous situation of unemployment or employment, since this would allow a better understanding of the nature of the need for entrepreneurial activity.

For this reason, as future lines of work, it is considered necessary to include household economic information as well as to analyze not only the professional situation over the last twelve months, but also from a career perspective.

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