

## 02C0343 TALENT4S3 Project

# Retention and attraction of TALENT for a better deployment of Smart Specialisation Strategies

## State of the Art

## Extremadura Region (Spain)

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## Section 1: Contextualization and Policy Instrument Description

### 1.1 Introduction: Extremadura Region

Extremadura is an autonomous community located in the southwest of Spain, consisting of the provinces of Caceres and Badajoz. It borders Castilla y León region to the north, Castilla-La Mancha region to the east, Andalusia region to the south, and Portugal to the west. It covers an area of 41,634 km<sup>2</sup>, representing 8.2% of the Spanish territory, making it one of the largest regions in Spain.

It is a predominantly rural region: according to 2022 figures, 58.2% of the population of Extremadura lives in 381 rural municipalities compared to 41.8% who live in the only seven urban centres with more than 20,000 inhabitants. This results in an economy based on agriculture and livestock farming.

Regarding agricultural production, Extremadura is one of the main producers of olive oil and Iberian ham in Spain. In 2022, the region produced around 57,971.8 tons of olive oil and 229,314 tons of pork meat according to data from the Statistics Institute of the Extremadura Regional Government.

According to the latest GDP (Gross domestic product) data for Extremadura for the second quarter of 2023, sectors that recorded positive annual variation rates were construction, agriculture, livestock, forestry and fishing, and the service sector, while industry was the only one to show negative growth.

The region has significant potential in the renewable energy sector, especially solar and biomass. Extremadura is a leading region in solar energy production in Spain, with an installed capacity of approximately 1,600 MW in photovoltaic solar plants. According to the 2023 Extremadura Energy and Environment Yearbook, regional renewable electricity generation represents 8.78% of the total in Spain, ranking sixth nationally. The region also excels in biomass, with various operative plants, contributing to energy sustainability.

Tourism in Extremadura is another important part of the regional economy, with its natural and cultural heritage, including natural parks, monuments, World Heritage cities, and historical and prehistoric sites attracting tourists, significantly contributing to the local economy.

Extremadura has a population of approximately one million inhabitants, with a low population density compared to other regions in Spain. The region faces demographic challenges such as an aging population (18% of the rural population is over 70 years old) and rural depopulation (40% of the population lives in the seven municipalities with more than 20,000 inhabitants), and the issue of youth migration to urban areas or outside the region in search of job opportunities. In 2022, around 18% of the population was over 65 years old, reflecting an aging demographic profile.

The unemployment rate in the first quarter of 2024 was 17.61%, one of the highest in the country, reflecting significant economic challenges, with the national average in Spain being 12.3%.

Given all the above, although Extremadura is not an industrialised region compared to more industrialised regions in Spain, its contribution is crucial in sectors such as agribusiness and renewable energy. The region also plays an important role in preserving Spain's cultural and natural heritage.

When placing the region within the European context, Extremadura benefits from European funds for regional development, especially through the European Regional Development Fund (ERDF). Extremadura's Smart Specialisation Strategy (RIS3) is aligned with EU cohesion policies, promoting innovation and sustainable development.

Its proximity to Portugal allows for significant cross-border cooperation, fostering joint projects in areas such as infrastructure, rural development, and environmental conservation.

## 1.2 Policy Instrument

The RIS3 (Research and Innovation Strategy for Smart Specialisation) is the strategic framework developed by the European Union to enhance regional innovation by focusing on specific areas of competitive strength. The RIS3 strategy encourages regions to identify and prioritise their unique assets and capacities, fostering economic growth and development through innovation.

In Extremadura, the RIS3 strategy aims to leverage the region's specific strengths by promoting research, development, and innovation activities. It aligns regional efforts with broader EU goals, ensuring that investments in innovation are strategic and impactful. The strategy is designed to boost economic growth by focusing on sectors where the region has a competitive advantage, improving innovation capacity, and fostering collaboration among regional stakeholders, including businesses, research institutions, and public entities. This approach not only strengthens the region's economy but also integrates it more effectively into the global innovation ecosystem.

The **RIS3 of Extremadura** addresses talent retention through several strategic initiatives focused on human capital development, especially in the fields of R&D and innovation. The strategy emphasises the following key points:

1. **Career Development:** The strategy aims to strengthen the career paths of researchers by ensuring their specialisation, intensification, and stabilisation within the regional innovation ecosystem. This includes funding for researchers at various stages, from predoctoral to postdoctoral, to maintain high standards of scientific and technical excellence.
2. **Talent Incorporation and Employability:** A significant focus is placed on incorporating talent into the region's research and innovation sectors, enhancing the employability of individuals through structured career development programs. This approach is intended to foster long-term stability and quality employment in R&D roles.
3. **Support for Innovation and Entrepreneurship:** The strategy includes the creation of physical and virtual spaces to foster scientific and technological entrepreneurship. These spaces aim to create a dynamic community connected to global innovation ecosystems, which in turn, helps in retaining talent by providing opportunities for growth and innovation within the region.

4. **Collaborative Networks:** The RIS3 strategy promotes collaboration between different administrative levels and sectors to ensure efficient resource use and to create synergies across various programs, further supporting the retention and attraction of talent by providing a robust and supportive environment.

These measures are framed under **Strategic Objective 1** aiming to strengthen the regional scientific-technological offer and orient it towards the innovation needs of companies (specifically Strategic Line 2 aiming to qualify human capital for the R&D&I) and **Strategic Objective 2** aiming to activate business investment in R&D&I and improve their capacities for smart specialisation (specifically Strategic Line 5 aiming to promote and attract talent to the region and interconnect regional companies with Extremadura's talent present globally).

All in all, these measures collectively aim to create a conducive environment in Extremadura that not only attracts but also retains skilled professionals in the region by providing clear career progression, employment stability, and opportunities for innovation and collaboration.

### 1.3 Data Infrastructure

The purpose of assessing the brain drain in the region and its consequences for the economy requires a robust and varied data infrastructure. Currently there is an infrastructure of data provided by different agencies, regional and national, which is detailed below.

**Table 1. Data infrastructure to assess the brain drain in Extremadura**

ORGANISATION	DATA INFRASTRUCTURE
National Statistics Institute (INE)	a) Labour Force Survey (LFS): It provides detailed data on the labour force, unemployment and employment, which allows for the analysis of the migration flows of professionals.
	b) Censuses and Registers: They provide detailed demographic information that allows tracking population movements and changes in the composition of the labour force.
Employment Observatory of Extremadura	Collects and analyses data on employment in the region, including labour supply and demand, which can help to identify sectors with the greatest loss of talent.
Ministry of Universities and Regional Ministry of Education	They provide an information system that includes data on enrolments, degrees and student mobility, essential to understand the flow of graduates who may be leaving the region.
Extremadura Public Employment Service (SEXPE)	Provides information on the regional labour market, including data on training, labour market insertion and employment programmes.
Chambers of Commerce and Business Associations	They frequently carry out private studies and surveys on talent and training needs, as well as on the perception of companies on the availability of skilled labour.

Despite the existing infrastructure, there are **critical areas where data are lacking**:

**a) *International and national mobility of professionals:***

- Detailed data on the destinations and sectors to which professionals leaving the region move.
- Information on the specific reasons for talent emigration (salaries, development opportunities, quality of life, etc.).

**b) *Return of talent:***

- Data on talent return programmes and their effectiveness.
- Information on the conditions that could encourage the return of emigrated professionals.

**c) *Specific economic impact:***

- Studies quantifying the direct and indirect economic impact of brain drain on key sectors of the regional economy.
- Data on the correlation between brain drain and investment in R&D, innovation and business growth.

**d) *Perception and satisfaction:***

- Surveys on the perception of young people and professionals on opportunities in Extremadura.
- Data on job satisfaction and quality of life of residents and emigrants.

**e) *Data integration:***

- Integrated systems that allow interoperability and joint analysis of data from different sources, facilitating a more holistic view of the phenomenon.

## Section 2: Regional Background Information

### 2.1 Demographic Profile of Extremadura

Extremadura has a characteristic demographic profile, influenced by historical, economic, and social factors. Agrarian reforms and changes in land ownership during the 19th and 20th centuries affected population distribution, concentrating it in rural areas. Extremadura has experienced continuous depopulation since the mid-20th century. Internal migrations to other regions of Spain and abroad, in search of better job opportunities, have significantly impacted population density.

Due to the emigration of young people and the low birth rate, Extremadura faces a progressive aging of its population. The lack of adequate infrastructure and public services in some rural areas also makes it difficult to retain young people and attract new residents.

Extremadura has a **population** of 1,054,776 inhabitants. The age structure in Extremadura continues to show a trend towards aging, with a rate of people over 65 years' old that is 12 percentage points higher than that of Spain.

**Table 2. Percentage of Population in Extremadura by Age Group**

Age groups	TYPE		
	Urban	Rural	Total
0-19	20.3%	14.9%	17.1%
20-64	61.6%	42.7%	50.5%
Over 65 years old	18.0%	42.4%	32.4%
	100.0%	100.0%	100.0%

Source: INE.

Extremadura has traditionally been a **region of emigration**. In the last decades of the 20th century, many people from Extremadura emigrated to **European countries** such as Germany, France, and Switzerland. This trend has decreased but has not completely disappeared. The number of people who left Extremadura for another country in 2022 (the latest published data) was 3,873, of which the vast majority (93.49%) were under 65 years old.

**To other regions** of Spain: Extremadura has experienced significant internal migration, especially to Madrid, Andalusia, the two Castiles, Catalonia and the Valencian Region. In 2022 (the latest published data), 13,641 people from Extremadura emigrated to other regions in Spain. Most emigrations to other regions are concentrated in the 25 to 34 age group as this age group is the most active in the workforce and is usually looking for better job and life opportunities.

There also exist a noticeable movement of the population from rural areas to larger cities such as Badajoz and Caceres in search of services and jobs. Extremadura faces significant challenges due to its demographic structure, marked by a high unemployment rate (17.6%), an aging population (32.4% over 65 years old), and the continuous emigration of young people in search of better opportunities.



## 2.2 Human Capital Profile of the Region

Extremadura has ensured that the majority of its population completes at least primary and compulsory secondary education. In the 2021-2022 school year, approximately 136,095 students were enrolled in these educational levels. This demonstrates a significant effort to guarantee basic education for all citizens.

**Table 3. Students Enrolled in the Education System. Academic Year 2021-22**

EDUCATION LEVELS	EXTREMADURA	Men	Women
Early Childhood Education	33,323	17,440	15,883
Primary Education	58,871	30,376	28,495
Especial Education	643	418	225
ESO	43,258	22,211	21,047
Baccalaureate	15,100	6,811	8,289
Other Training Programs	279	156	123
Basic Level Vocational Training	2,100	1,526	574
Intermediate Level Vocational Training	8,303	4,546	3,757
Advanced Level Vocational Training	9,305	4,787	4,518
Special Courses	99	94	5
University Education	22,417	9,952	12,465
Special Regime	11,190	4,453	6,737
Adult Education	7,094	2,823	4,271

Source: Ministry of Education, Vocational Training, and Sports. Statistical Yearbook: The Figures of Education in Spain.

The continuation of studies after compulsory secondary education (Baccalaureate and Vocational Training) is remarkable, with a significant number of enrolments in both baccalaureate and vocational training. There is a notable preference for vocational training over baccalaureate studies (17,608 enrolled), as it provides a more direct path to employment and aligns with labour market needs. Significant differences are observed in the case of female students from Extremadura, who have a higher expected school life than males, both in non-university education (14.2 years for males compared to 14.4 for females) and in university education, where women spend more time (1.7 years for males compared to 2.3 years for females).

Extremadura has an aging population and a low birth rate, which reduces the number of young people of university age. Additionally, there is a significant trend of youth migration to other regions of Spain in search of better educational and employment opportunities. The University of Extremadura may be facing challenges in terms of the perceived quality and relevance of its educational programs.

The region has increased the availability of vocational training and dual vocational training programs to enhance workers' qualifications and better align them with labour market needs. The occupancy rate of vocational training slots has been positive, showing an increase in enrolment and student participation in dual programs that combine education with work experience.



## 2.3 Brain Drain Situation in Extremadura

In the case of Spain, it can be noted, according to Domingo and Blanes (2016), that the scientific literature on the new emigration has focused from the outset on young people, emphasising the so-called 'brain drain' (Alaminos and Santacreu, 2010; Del Río, 2009; Ruiz-Castillo, 2007; Santos, 2013). We are witnessing a new cycle of emigration that reminds some of that which took place in the 1960s and 1970s. The Spanish migration balance was negative again in 2011, when outflows exceeded inflows by 50,090 people, according to data from the National Statistics Institute (INE, 2015). And in 2013, this trend continued, with Spain being the European country with the highest emigration: a total of 532,303 people, according to Eurostat data. Recently, this trend has slowed down slightly, but the numbers emigrating from Spain are still quite remarkable (296,248 emigrants from the country in 2019). Moreover, unlike the emigrants of the past, current emigrants tend to be graduates aged between 20-25 and 30-35 and without family responsibilities. In fact, the main difference with the past lies mainly in the level of education of the young people experiencing migration. We are witnessing an increasing mobility of highly qualified young people who have acquired at least a university degree, have an adequate knowledge of other languages and a high command of ICT, but face a labour market lacking in skilled occupations and with requirements or demands significantly lower than the educational qualifications of these young people. This is because the improvement in education in Spain, despite the context of strong growth in which it took place, apparently did not translate into an increase in productivity, which also suggests a deeper analysis of the relationship between schooling and the performance of the economic system.

In the political debate, some highlight the resilience of these young people and praise it, but it should be noted that this same political structure does nothing to help those who have emigrated, nor has it done anything to retain them; on the contrary, it has contributed to their expulsion from the country (Domingo and Blanes, 2016).

As a consequence of this process, there has been a relative decline in the youth population due both to a reduction in fertility and to the increasing mobility of young people to other countries. The most worrying aspect of this situation is that it will have negative effects on the long-term sustainability of the welfare state in Spain (Moreno, 2017). We are losing our best-educated young people who, faced with the difficult situation of the labour market, decide to emigrate in search of better opportunities, which affects the country's competitiveness and economic and social development (for Spain as a whole, Rodríguez, 2014; Jurado Guerrero, 2016).

The particular characteristics attributed to employment in Spain are even more pronounced in Extremadura: low competitiveness, low productivity, lack of specialised industrial infrastructure, low technological level, and sluggish markets. These factors drive the most highly educated and best-prepared young people to emigrate abroad in search of better job opportunities, fleeing unemployment and lack of stability. The issue of overqualification is not trivial and has important consequences (García Montalvo, 2009). From an educational policy perspective, it subsidises an activity that does not generate the expected return for society, becoming a costly procedure for staff selection in companies and public institutions. From the workers' perspective, overqualification can generate significant dissatisfaction with major human and social costs (absenteeism, low self-esteem, poor psychological health, drug problems, etc.).

## Section 3: Analysis of Brain Drain Factors

### 3.1 General Assessment

Both the emigration and immigration of qualified professionals from Extremadura are influenced by a variety of key regional factors.

Regarding the **factors contributing to the emigration of qualified professionals**, the following can be distinguished:

#### a) Limited Job Opportunities:

- *Job Offerings*: Extremadura has fewer job opportunities compared to more industrialized and urbanized regions of Spain, leading qualified professionals to seek opportunities elsewhere.
- *Economic Sectors*: The economy of Extremadura is more focused on agriculture and the primary sector, with fewer opportunities in high-tech, service, and advanced manufacturing sectors.

#### b) Salaries and Working Conditions:

- *Salary Competitiveness*: Salaries in Extremadura are generally lower than in regions such as Madrid, Catalonia, or the Basque Country, motivating professionals to emigrate in search of better remuneration.
- *Benefits and Conditions*: Working conditions and additional benefits may also be less attractive compared to those in other regions.

#### c) Education and Training:

- *Educational Institutions*: Although Extremadura has universities and training centres, many students choose to complete their studies in other regions with higher prestige institutions and more diverse educational offerings.
- *Access to Research*: Opportunities for research and advanced professional development may be more limited in Extremadura due to lower investment in R&D.

#### d) Infrastructure Development:

- *Transport Infrastructure*: Connectivity and transport infrastructure may be less developed, complicating access to markets and business centres.
- *Technological Services*: The availability of technological services and access to advanced technologies is inferior compared to more developed regions.

Regarding the **factors contributing to the immigration of qualified professionals**, the following are identified:

#### a) Quality of Life:

- *Cost of Living*: The cost of living in Extremadura is significantly lower than in major cities like Madrid or Barcelona, which can be attractive to professionals seeking a higher quality of life at a lower cost.

- *Natural Environment*: Extremadura offers a privileged natural environment, with rural landscapes and natural spaces that can attract those seeking a quieter and healthier lifestyle.

#### b) Incentive Policies:

- *Subsidies and Grants*: The regional and local government may offer tax incentives, subsidies, and grants to attract qualified professionals, especially in strategic sectors.
- *Return Programs*: Implementing specific initiatives to attract back professionals who have previously emigrated may be effective.

#### c) Development of Strategic Sectors:

- *Innovation and Technology*: Investments in emerging sectors such as green technology, renewable energies, and advanced agribusiness can create new attractive opportunities for qualified professionals.
- *Industrial Clusters*: The creation of industrial clusters and technology parks can, to some extent, attract specialized talent.

#### d) Entrepreneurship Initiatives:

- *Support for Entrepreneurs*: Support programs for entrepreneurs, incubators, and accelerators can encourage professionals to settle in the region to develop their own business projects.
- *Business Networks*: The formation of business networks and professional associations can provide a supportive and collaborative environment for qualified professionals.

In summary, Extremadura offers an attractive combination of affordable housing, access to nature, adequate services, and a high quality of life. While it may be perceived as a less prosperous region, its advantages in terms of costs and environment make it an interesting option for those seeking a balance between quality of life and affordability.

## 3.2 Socioeconomic Conditions and Employment Opportunities

In Extremadura, labour trends for 2024 reflect significant changes in job availability. In 2022, **employment** in Extremadura grew by 13,400, reaching 409,400 employed people, a 3.4% increase from the previous year. However, in 2023, the number of employed people rose to 415,400, representing a variation rate of only 1.05%. The increase in employment was higher among women, with 3,200 more employed (1.8%), compared to 2,400 men (1.03%). This brings the total number of employed people to 415,400.

In **occupations** such as *Directors and Managers, Craftsmen and Skilled Workers in Manufacturing Industries, and Plant and Machine Operators*, women are underrepresented with less than 20% of the total employees in each category. However, women are overrepresented in categories such as *Technicians and Scientific and Intellectual Professionals* (61.33%), *Accounting and Administrative Employees* (62.07%), and *Service Workers in Restaurants, Personal Care, Protection, and Sales* (63.86%). *Elementary Occupations* show a more balanced distribution with 55.04% men and 44.79% women.

**Table 4. Employed by Occupation and Gender in Extremadura. Absolute Values. 2023**

Occupation	Both	Men	Women
Managers	12,200	10,000	2,200
Technicians and Scientific and Intellectual Professionals	72,400	28,000	44,400
Technicians; Support Professionals	37,600	23,800	13,800
Accounting, Administrative, and Other Office Employees	40,600	15,400	25,200
Service Workers in Restaurants, Personal Care, Protection, and Sales	92,700	33,500	59,200
Skilled Agricultural, Livestock, Forestry, and Fishery Workers	17,300	14,000	3,300
Craftsmen and Skilled Workers in Manufacturing and Construction Industries	52,700	49,200	3,500
Plant and Machine Operators and Assemblers	28,200	25,400	2,700
Elementary Occupations	58,500	32,200	26,200
Military Occupations	3,200	3,000	200
<b>TOTAL</b>	<b>415,400</b>	<b>234,500</b>	<b>180,700</b>

Source: INE.

The analysis reveals an unequal **gender distribution** in various occupational categories. This information can be useful for developing gender equality policies and improving the representation of women in underrepresented sectors.

The average **salary** in Extremadura is 21,393.01 euros. Fifty percent of people in Extremadura earn less than 18,146.41 euros per year, which may indicate that, with the median to the left of the average, there is some skewness of the average towards higher values due to the existence of some very high salaries. This can reflect a certain inequality in distribution. These salary levels in Extremadura are lower compared to other regions of Spain, making Extremadura the autonomous community with the lowest average salary.

The detected patterns in **employment demand** indicate that the main trends include jobs related to the Agro-food Industry: this sector remains a cornerstone, with companies dedicated to food production and processing. The tomato, meat, and fruit and vegetable industries generate a significant portion of employment in the region, with a growing focus on export.

Regarding growing sectors: an increase in employment is expected in areas such as technology and sustainability. Specialists in AI, renewable energy, and data analysts are in high demand due to digitalisation and the energy transition. These trends reflect the need for adaptability and diversification in Extremadura's labour market, driven by technology, sustainability, and the demand for more flexible working conditions.

Extremadura is experiencing an economic recovery with expectations of job creation in various key sectors. Although salary levels are lower compared to other regions, training policies and the increase in job opportunities are contributing to improving the region's socioeconomic situation. With a focus on vocational training and attracting new industries, Extremadura must continue to work towards closing the gap with more advanced regions of Spain.

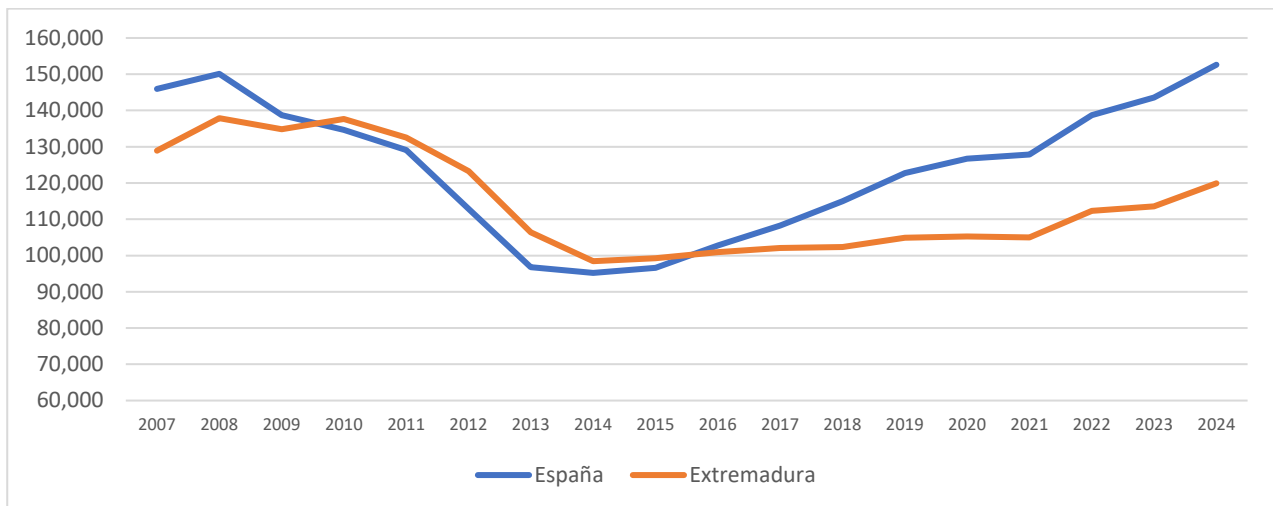
### 3.3 Housing and Regional attractiveness

The **housing situation in Extremadura** reflects a series of challenges and opportunities in terms of supply, accessibility and sustainability.

Extremadura faces a significant housing shortage, especially in urban and rural areas with high demand. The population and housing census of 2021 shows 37.82% of secondary homes and 17.67% of vacant homes in Extremadura, figures higher than the national average. Extremadura has 662 homes per 1,000 inhabitants, while the total state figure is 547 per 1,000 inhabitants. 78.8% of the housing is owner-occupied, while rental housing represents 9.1%, seven points below the average in Spain.

According to data from the General Council of Notaries, the average **housing price** in Extremadura was 991 euros per square meter in June 2024. Despite a slight monthly decrease, prices have increased by 3.9% compared to the previous year.

Chart 1. Annual evolution of housing prices in Extremadura and Spain (2007-2024)



Source: INE.

Extremadura is known for offering a high quality of life, with a slower pace and less stress than in large cities. The region boasts a rich historical and cultural heritage, with numerous archaeological sites, monuments, and traditional festivals attracting both residents and tourists. Although it may be perceived as a less economically dynamic region compared to other parts of Spain, Extremadura compensates with its quality of life, affordable prices, and privileged natural environment.

### 3.4 Social Environment

In Extremadura, **social capital** levels can be observed through the presence of community networks and associations. On one hand, Extremadura has a variety of cultural, sports, and community associations that promote citizen participation and social cohesion. These networks facilitate mutual support and collaboration among residents. On the other hand, there is a tradition of volunteering and cooperation on community projects, especially in rural areas, which strengthens

Extremadura's social capital. Additionally, we must consider the trust and solidarity in the region through personal relationships, as in the small towns and cities of Extremadura, personal and trusting relationships are strong, resulting in close-knit communities and notable communal solidarity. Moreover, there is a high level of informal social support, where people rely on family and friends for emotional and practical assistance. Another aspect to measure Extremadura's social capital would be **civic participation**. For instance, electoral participation levels are relatively high, indicating a commitment to democratic processes and an interest in regional development. Regarding activism and social movements, there is an active presence of social and environmental movements working on issues such as natural environment conservation and the promotion of sustainable development.

Regarding Extremadura's **regional identity**, it is essential to highlight the rich cultural heritage of the region, with local traditions and festivals that reinforce a strong regional identity. Concerning language and customs, although there is no distinct regional language like in other autonomous communities, there are linguistic peculiarities and local customs that contribute to a unique regional identity. When considering the sense of belonging, people from Extremadura generally have a strong sense of pride and attachment to their region, manifested in their defence of local products, gastronomy, and way of life.

Overall, the perceived **attractiveness of the Extremadura region** fundamentally lies in the following factors:

**a) Quality of life:**

- *Natural environment*: Extremadura is known for its natural landscapes, including national parks such as Monfragüe and Sierra de Gata, which attract nature enthusiasts and rural tourism.
- *Tranquility and Safety*: The region offers a peaceful and safe environment, with lower crime rates compared to large cities.

**b) Cost of living:**

- *Affordability*: The cost of living in Extremadura is lower than in many other regions of Spain, which can be appealing to families and professionals seeking a more affordable lifestyle.

**c) Sustainable development:**

- *Renewable energy*: Extremadura has invested in renewable energy, particularly solar power, giving it a reputation as a region committed to sustainable development.
- *Agriculture and gastronomy*: The quality of agricultural products and local gastronomy, with items such as Iberian acorn ham, are attractive to both residents and tourists.

## Section 4: Evaluation of Brain Drain Consequences

### 4.1 General Assessment

The loss of human capital has multiple negative consequences for the socioeconomic situation in Extremadura. These consequences can be assessed from different perspectives: economic, social, and demographic. The main consequences are detailed below:

From an **economic perspective**:

**a) Reduction in economic growth, affecting:**

- **Productivity**: The departure of highly qualified individuals decreases labour productivity, as these individuals often have specialised skills and knowledge that are crucial for innovation and development.
- **Innovation**: The lack of qualified talent limits the ability of local businesses to innovate and compete in global markets, negatively impacting industrial and technological development.

**b) Decreased attractiveness for investment, both foreign and local:**

- **Foreign direct investment**: Multinational companies seek locations with an abundant supply of qualified labour. The brain drain makes Extremadura less attractive for this type of investment.
- **Local businesses**: Existing companies may find it difficult to grow or even survive without access to an adequate workforce, potentially leading to higher business closure rates.

**c) Imbalance in the labour market, resulting in:**

- **A shortage of professionals in key sectors**: The departure of professionals from sectors such as healthcare, education, and engineering can create shortages in these fields, affecting the provision of essential services and the execution of infrastructure projects.

From a **social perspective**:

**a) Quality of public services:**

- **Healthcare**: The emigration of doctors and nurses may lead to a decrease in the quality and availability of healthcare services, increasing waiting times and reducing specialised care.
- **Education**: The departure of professors and researchers affects the quality of education and the ability of universities and research centres to carry out innovative projects.

**b) Social inequality, referring to:**

- **Inequality of opportunities**: Emigration of talent exacerbate regional inequalities, as high-quality job and educational opportunities become concentrated in other regions/ countries.
- **Skills gap**: The lack of qualified professionals may increase the gap between those with access to quality education and training and those without, perpetuating cycles of poverty and social exclusion.

From a **demographic perspective**:

**a) *Aging population, in terms of:***

- **Population pyramid**: The departure of young people and working-age adults accelerates the aging of the population, which has significant implications for the sustainability of pension systems and social services.
- **Demographic burden**: A higher percentage of elderly population implies a greater burden on healthcare and social assistance services, and a smaller base of contributors to support these systems.

**b) *Reduction in the population base, caused by:***

- **Depopulation**: Continuous emigration may lead to depopulation in certain areas, negatively affecting the economic and social vitality of entire communities.

## 4.2 Human Capital Loss

The brain drain refers to the emigration of highly qualified and educated individuals from a region or country. In the case of Extremadura, the specific **consequences** of this situation can be referred to several aspects:

- **Reduction in productivity**: The departure of qualified professionals can lead to a decrease in the region's productivity and innovative capacity.
- **Stagnated economic development**: The loss of human capital can limit economic growth, as there are fewer people capable of driving new businesses and projects.
- **Demographic imbalances**: The emigration of young people and professionals exacerbates the aging of the population, which has negative implications for the sustainability of public services. According to various demographic studies, Extremadura has experienced a significant loss of young and highly qualified population in the last decade.

Some specific professions that tend to emigrate and are crucial for Extremadura can be drawn from labour market data.

Regarding **healthcare**, data from the Extremadura Health Service indicate a shortage of specialist doctors and nurses. Studies by the World Health Organization (WHO) show that a lack of healthcare personnel is correlated with poorer public health indicators, so the shortage of these healthcare professionals can severely affect the quality of health services.

Another sector affected by regional emigration is **education**. Reports from the Ministry of Education and Vocational Training reveal that Extremadura struggles to retain teachers and researchers, impacting the quality of education and the region's scientific output.

In the **industrial** sector, statistics from the Institute of Economic Studies (IEE) indicate that the region faces a deficit of engineers and technicians, crucial for industrial and technological development. The loss of these professionals can impact the sector and its ability to develop infrastructure.



## 4.3 Regional Competitiveness

### 4.3.1. Economic

With just over 1 million inhabitants (2.2% of the country's total population), Extremadura is the fifth least populated region. **Extremadura's GDP amounts to 22.531 billion euros, representing 1.7% of the Spanish GDP**, making it the third region with the lowest contribution to the national total. The GDP per capita stands at 21,343 euros.

In terms of productive specialisation, Extremadura excels in its robust agricultural sector, which contributes 7.7% to its GDP (compared to the national average of 2.6%); it also stands out in the extractive industry (8.6% versus 4.9% in Spain) and public services (26.1% compared to 17.8% in Spain). Conversely, the weight of the manufacturing industry is notably lower (7.2% compared to 12.5% in Spain) and industry-related services (20.9% versus 28.5%).

The total number of **unemployed in Extremadura is 86.7 thousand** in the first quarter of 2024, a 7.16% increase compared to the previous quarter (INE). The youth unemployment rate rises to 44.84%, the percentage of households with all members unemployed is 10.49%, and the female unemployment rate is 19.91%.

**Table 5. Employment in Extremadura by sectors (thousands of people)**

2016	2017	2018	2019	2020	2021	2022
Agriculture, livestock, forestry, and fishing						
39.0	43.6	46.2	43.8	37.1	39.0	37.6
Extractive industries; supply of electricity, gas, steam, and air conditioning; water supply, sewerage, waste management, and remediation activities						
5.2	4.9	5.1	4.9	5.5	5.8	5.8
Manufacturing industry						
24.0	24.8	25.0	26.3	25.5	25.9	26.7
Construction						
25.0	24.4	25.2	27.9	27.0	28.5	30.1
Wholesale and retail trade; repair of motor vehicles and motorcycles; transportation and storage; hospitality						
98.3	102.5	99.8	102.7	94.8	95.7	98.5
Information and communications						
2.8	3.1	3.1	3.2	3.3	3.5	3.7
Financial and insurance activities						
6,3	6,2	5,9	5,9	5,8	5,7	5,5
Real estate activities						
1,9	2,0	2,2	2,1	1,9	1,9	2,0
Professional, scientific, and technical activities; administrative and support services						
101,8	104,3	105,8	108,4	110,2	110,9	113,2
Arts, entertainment, and recreation; repair of household goods and other services						
26,5	28,6	29,2	29,3	26,7	27,1	27,8

Source: INE.

### 4.3.2. Social

According to the Living Conditions Survey by the INE, the average **income per person** in Extremadura amounted to 11,363 euros, compared to the average income in Spain of 14,082 euros.

Regarding **income inequality**, the S80/S20 indicator has a value of 4.6, indicating that the richest 20% have total incomes 4.6 times greater than the poorest 20%. As for the **Gini index values**, we observe that the income distribution is relatively equal, as it has a value (28.7) closer to 0 than to 100.

**Regarding healthcare**, medical exams and treatments constitute the core of health care. The data collected suggests that Extremadura has better access to medical care compared to the average in Spain and the European Union. However, there is still a small percentage of the population that faces barriers to accessing necessary medical care.

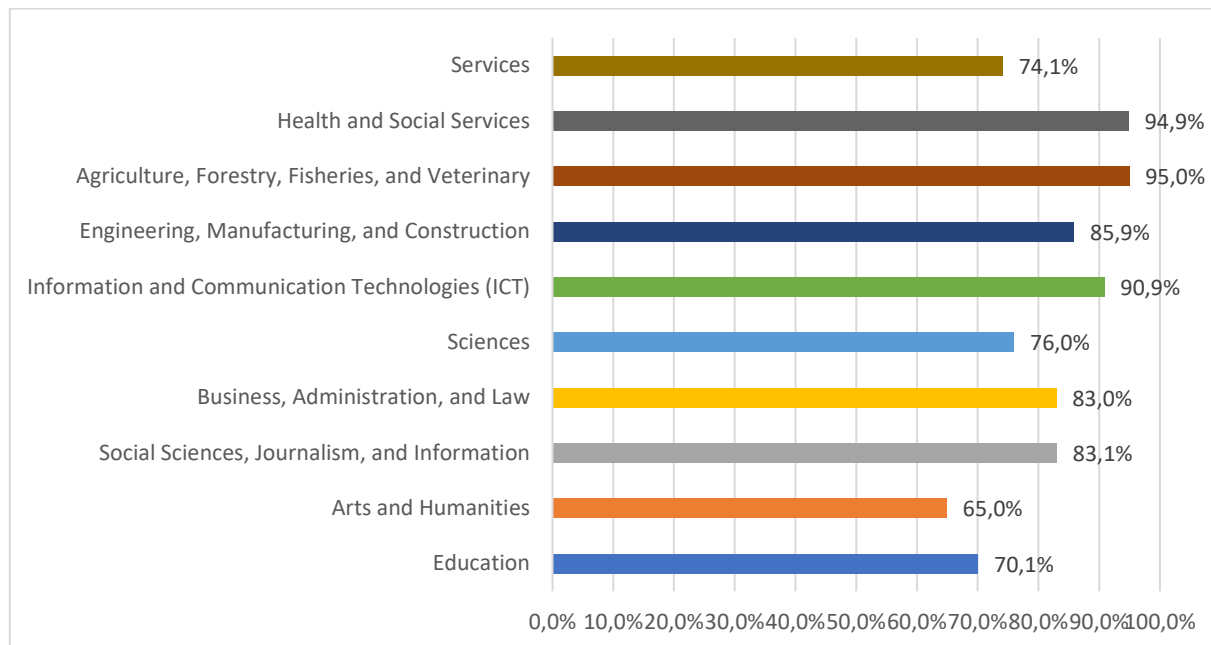
The **life expectancy** of Extremadura's residents (82.1 years) exceeds the European Union average by one and a half years.

### 4.3.3 Educational

In the 2022/2023 academic year, 17,072 students were enrolled at the University in Extremadura, of which 9,608 were women (56.4%). **University enrolment** in Extremadura shows a modest recovery compared to the more positive national trend. Although there is a general decline in the number of university graduates in Extremadura, recent data suggests a possible stabilisation. It is crucial to continue monitoring these numbers and address the factors affecting student retention and graduation to promote solid and accessible higher education in the region.

Data from the 2019 labour market insertion survey of university graduates conducted by the INE indicates that the employment rate for university students in Extremadura is 81.9%. The fields of Medicine, Veterinary, and Nursing have the highest employment rates, with 97.7%, 97.3%, and 96.4%, respectively. The fields with the lowest employment rates are Humanities, Law, and Languages, where nearly 5 out of 10 graduates are not working.

Chart 2. Employment rate by field of study



Source: INE.

Regarding non-university studies, the data reflects a general stability in school enrolment in Extremadura with slight variations. Increases in **Vocational Training** and stability in crucial levels such as Compulsory Secondary Education and Baccalaureate are positive, while decreases in early childhood and primary education could indicate demographic trends to be analysed.

What is clear is that Vocational Training has experienced significant growth. During the 2022-2023 academic year, more than 20,919 students were enrolled in Vocational Training. Regarding the availability of centres, the importance given to Vocational Training in Extremadura is also evident, as more than 50% of the region's centres are dedicated to this type of education, accommodating the 26% of students who choose this path.

The **Organic Law on the Organisation and Integration of Vocational Training** aims to transform the system, turning it into a gateway to quality jobs for young people. Dual Vocational Training, which combines theoretical training with practical learning in companies, is a key approach. In summary, Vocational Training in Extremadura is evolving to offer quality opportunities and adapt to the demands of the labour market.

## 4.4 Sectoral Challenges

The migration of talent presents significant challenges in various key sectors in Extremadura. These challenges affect the availability of jobs in both the short and long term:

**1. Education.** - The migration of young and highly qualified professionals in search of better job opportunities outside Extremadura reduces the number of local talents. This affects the quality of education and innovation in the region's institutions. The return of talent is essential to strengthen the educational system. Training in entrepreneurial skills is essential to improve graduates'

employability. The lack of specialised teachers, especially in areas such as science, technology, engineering, and mathematics, hinders the provision of quality education and the training of new generations of professionals.

**2. Healthcare.** - The migration of healthcare professionals affects the quality and accessibility of health services. The Extremadura Regional Government seeks to incentivise the return of talent in this sector but faces the challenge of competing with other regions and countries.

- Lack of medical professionals: The migration of doctors and nurses in search of better working conditions in other regions or countries leaves Extremadura with a deficit of healthcare professionals.
- Poor healthcare: The shortage of medical staff can lead to longer wait times and reduced quality of healthcare.
- Regional inequality: Rural areas can be particularly affected, exacerbating inequalities in access to health services.
- Lack of medical staff to cover shifts and maintain essential services and long-term difficulty in attracting and retaining new medical professionals.

**3. Industry.** - The scarcity of jobs in the short and long term is a problem while the management of talent in technological disciplines is another significant challenge.

- Deficit of qualified labour: The industry may suffer from a lack of technicians and specialised workers necessary to operate and maintain advanced technologies.
- Reduced competitiveness: Without a constant flow of talent, companies may struggle to innovate and maintain competitiveness compared to other regions more attractive to professionals.
- Stagnant economic development: The migration of talent limits local economic growth, as industries cannot expand or improve their productive capacities.
- Immediate need to fill specialised positions that cannot be easily replaced.
- Decrease in the ability to attract new investments and companies that require a skilled workforce.

#### **Strategies to mitigate challenges:**

- **Local incentives:** Offer tax incentives and benefits to professionals who decide to work in Extremadura.
- **Infrastructure improvement:** Develop modern and efficient infrastructures that make life and work in the region more attractive.
- **Retention and repatriation programs:** Implement programs that retain local graduates and repatriate emigrated professionals.
- **Public-Private Collaboration:** Promote collaboration between the government and the private sector to create training and employment programs aligned with labour market needs.



In conclusion, the migration of talent in Extremadura poses significant challenges for education, healthcare and industry, affecting the availability of qualified professionals in the short and long term. Addressing these challenges requires comprehensive and collaborative strategies that promote the retention and attraction of talent to the region. The return of talent is crucial for the sustainable development of Extremadura. Investment in education, healthcare and industry must go hand in hand with specific strategies to attract and retain qualified professionals.

## Section 5: Study of Existing Policies and Activities

### 5.1 Identification of Policy Challenges

Despite the policies and programs implemented to address the retention and attraction of talent issue, Extremadura continues to struggle with the emigration of young professionals and the difficulty of attracting external talent.

Table 6. Specific policy measures aimed at talent retention and attraction in Extremadura

SPECIFIC POLICY MEASURES
<b>1. Starter homes in the real estate market</b>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Programs to assist first-time homebuyers, such as subsidies and low-interest loans.</li> <li>○ <b>Scale:</b> Regional and local.</li> <li>○ <b>Challenges:</b> Limited supply of affordable housing; bureaucracy in the allocation of aids; need to improve connectivity and services in areas where these homes are offered.</li> </ul>
<b>2. Marketing campaigns to attract talent</b>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Marketing campaigns promoting Extremadura as an attractive place to live and work, highlighting the quality of life, lower cost of living, and job opportunities in specific sectors.</li> <li>○ <b>Scale:</b> Regional.</li> <li>○ <b>Challenges:</b> External perception of the region; lack of international visibility; need for a more robust and coordinated communication strategy.</li> </ul>
<b>3. Tax and financial incentive programs</b>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Reduction of taxes and subsidies for new businesses and technology start-ups.</li> <li>○ <b>Scale:</b> Regional.</li> <li>○ <b>Challenges:</b> Complexity in applying for incentives; need for greater promotion and accessibility of these programs for local and external entrepreneurs.</li> </ul>

Table 7. General policy lines directed at talent retention and attraction in Extremadura

GENERAL POLICY LINES
○ <b>Infrastructure</b>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Investments in transportation infrastructure (roads, railways) and digital infrastructure (broadband, 5G).</li> <li>○ <b>Scale:</b> National and regional.</li> <li>○ <b>Challenges:</b> Need to improve internal connectivity and connections with other regions; funding and execution of long-term projects.</li> </ul>

<ul style="list-style-type: none"> <li>○ <b>Research and Development (R&amp;D)</b></li> </ul>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Promotion of investment in R&amp;D through public and private funding, collaboration between universities and businesses, and creation of technology parks.</li> <li>○ <b>Scale:</b> National and regional.</li> <li>○ <b>Challenges:</b> Increasing investment; effective integration of research results into the market; retention of researchers and scientists.</li> </ul>
<ul style="list-style-type: none"> <li>○ <b>Education and Training</b></li> </ul>
<ul style="list-style-type: none"> <li>○ <b>Policy:</b> Improving the quality of education and vocational training by aligning it with labour market demands.</li> <li>○ <b>Scale:</b> National and regional.</li> <li>○ <b>Challenges:</b> Updating curricula; bridging the gap between education and employment; developing skills in emerging sectors.</li> </ul>

On the other hand, regarding Extremadura's Smart Specialisation Strategy (RIS3), it focuses on identifying and enhancing areas of high growth and competitiveness potential. In this context, policies must align to promote key sectors such as: agri-food, renewable energies, sustainable tourism, and ICT.

Table 8. Linkage of policies and measures with RIS3 and key challenges in Extremadura

LINKS WITH RIS3 AND KEY CHALLENGES
<p><b>1. Alignment with key sectors</b></p> <ul style="list-style-type: none"> <li>○ Talent attraction and retention policies should focus on sectors prioritised by RIS3, providing specialised training, incentives, and employment opportunities in these fields.</li> <li>○ <b>Challenge:</b> Coordination among different stakeholders (government, businesses, universities) to implement effective strategies.</li> </ul>
<p><b>2. Development of innovative ecosystems</b></p> <ul style="list-style-type: none"> <li>○ Create ecosystems that promote innovation and entrepreneurship by strengthening collaboration between businesses and research centres.</li> <li>○ <b>Challenge:</b> Ensuring the funding and sustainability of these ecosystems; attracting and retaining specialised talent in innovation.</li> </ul>
<p><b>3. Spatial scale of Policies</b></p> <ul style="list-style-type: none"> <li>○ <i>National:</i> Fiscal and investment policies aimed at improving connectivity and the global attractiveness of the region.</li> <li>○ <i>Regional:</i> Specific training and employment programs aligned with RIS3; incentives for companies in strategic sectors.</li> <li>○ <i>Local:</i> Urban revitalisation projects, improvement of local services, and creation of attractive communities for young professionals and their families.</li> </ul>

## 5.2 Describe level of existing and desired brain drain policy maturity

In Extremadura, the existing policies to address brain drain are still in the implementation phase, and since the level of maturity is very low, it is too early to measure and assess the impact of the policies being introduced. Although some positive results have been observed, there is still a long way to go to achieve a significant and sustained impact.

## 5.3 Policies, Programs, Instruments and Measures considered as a Good Practice

Within the framework of the analysis of existing measures, the following Good Practices have been identified:

**Table 9. Identification of good practices on the return of talent in Extremadura**

GOOD PRACTICE	Implementing agency	Brief description
<b>Strategy for the Return and Connection of Extremadura Talent Abroad</b>	Regional Government of Extremadura	Harnessing the potential of the Extremadura population living abroad and attracting new professionals and companies. This implies facilitating the return of talent and creating measures that motivate returnees both financially and in other aspects.
<b>Programme 'Link Extremadura in the World'.</b>	General Directorate of External Affairs and General Directorate of Innovation and Educational Inclusion of the Department of Education and Employment. Regional Government of Extremadura	Through this initiative, people from Extremadura who work outside the Autonomous Community will share their experiences abroad with secondary school students. These individuals are selected based on the theme of their projects or because they are alumni of the respective school.
<b>Network for Return Mediation</b>	SEXPE (Extremadura Public Employment Service) and the General Directorate of External Affairs	It offers services to people abroad and assists those who wish to return, ensuring they can do so under favourable conditions.
<b>Extremadura Tech Talent Program</b>	Office for Innovation. FUNDECYT, Regional Government of Extremadura	An initiative aimed at creating opportunities for those developing their technological, digital, or scientific careers abroad to return to Extremadura. The objective is to improve working conditions and offer a high quality of life in the region.



<p><b>Talent Programs Mobility Programs</b></p> <p><b>Return and Support</b></p>	<p>SEPE (Public State Employment Service), Secretariat of State for Migration, Youth Institute, and Autonomous Communities.</p>	<p>Targeted at young people abroad, these programs provide support for hiring, self-employment, assistance with travel and initial accommodation expenses, as well as a process of guidance and support.</p>
<p><b>Program for Promoting the Return of Extremaduran Talent Abroad</b></p>	<p>University of Extremadura and the General Directorate of University Affairs of the Regional Government of Extremadura.</p>	<p>It aims to enhance the employability of university graduates through training in entrepreneurial skills. This is a scholarship program for internships designed to facilitate their integration into the regional productive sector.</p>
<p><b>Beta Joven Program</b></p>	<p>General Directorate of Planning and Evaluation of Active Employment Policies of Extremadura, SEXPE (Public State Employment Service), and Action Against Hunger.</p>	<p>It focuses on the social and labour inclusion of young people aged 18 to 29 and local businesses.</p>
<p><b>Stop Brain Drain Program</b></p>	<p>Roche Farma and FUNDESALUD, Department of Health and Social Services, Regional Government of Extremadura</p>	<p>Scholarship program designed to assist young researchers in the healthcare field in developing their research activities within their own country, especially when they are forced to leave due to a lack of resources for their projects.</p>

## Section 6: Conclusions

Although there is considerable data infrastructure to evaluate the brain drain in Extremadura, it is crucial to improve the collection and analysis of specific data on professional mobility and its economic impact, as well as to implement integrated data systems for better decision-making.

Youth emigration in Spain, particularly in peripheral regions like Extremadura, is creating a demographic void by affecting both the young population and the elderly. Student mobility, motivated by the search for better job and educational opportunities, reflects the perception of limited prospects in the country. University students, especially from rural areas, tend to emigrate for study and work, although the intention to continue studies abroad is low. The division between the disillusioned, the ambitious, and the rooted shows diverse attitudes towards emigration and work, indicating the need to reinforce support and training tailored to labour market demands.

The dynamics of emigration and immigration of qualified professionals in Extremadura is a complex phenomenon influenced by multiple factors. Improving job opportunities, salary conditions, infrastructure, and training can help retain and attract talent. Likewise, leveraging quality of life advantages and developing strategic sectors can position Extremadura as an attractive destination for qualified professionals. On this regard, it is crucial to implement policies that retain and attract talent, improve working conditions, promote innovation and economic development, and strengthen educational and healthcare systems. Fostering an environment that retains and attracts talent is essential to maintaining a constant cycle of innovation and economic growth in the region.

To alleviate the negative effects of brain-drain in Extremadura, it is essential to implement policies based on scientific evidence that promote talent retention. This can include tax incentives, improved working conditions, investment in education and healthcare, and the development of infrastructure that attracts and retains qualified professionals. Moreover, promoting collaboration between the government, universities and businesses is crucial to create an environment that fosters innovation and sustainable economic growth.

Extremadura uses policy instruments such as the **Smart Specialisation Strategy (RIS3)** and the **ERDF Operational Program** to align its resources and efforts with the regional strategic areas. These Policy Instruments aim not only to boost innovation and competitiveness but also to address critical objectives such as brain drain through a series of comprehensive measures that improve education, incentivise R&D, support entrepreneurship and create attractive living conditions to retain and attract talent to the region.

To address brain drain in Extremadura effectively, close coordination between specific and general policies is crucial. Additionally, the spatial scale of each policy should be considered to maximise its impact and ensure that the measures implemented are sustainable and effective in the long term.

To effectively address brain drain, Extremadura needs to offer:

- a) **Attractive and diversified employment opportunities:** The lack of an attractive and diversified job offer is a crucial factor in talent drain. Many professionals do not find opportunities suitable for

their skills and aspirations within the region. For this, it is necessary to develop fiscal and financial incentive programs to attract companies and promote local entrepreneurship, especially in key emerging sectors such as technology, renewable energy, and agribusiness. Establish public-private partnerships to create more skilled jobs.

- b) **Quality infrastructure:** Insufficient transportation and communication infrastructure limits the region's connectivity and accessibility. Therefore, investing European and national funds in improving transport infrastructure (roads, railways) and expanding broadband and 5G technologies is a priority to ensure adequate connectivity. Promoting public-private partnerships for the expansion of transport and digital infrastructure networks is also essential.
- c) **Innovation and entrepreneurship ecosystem:** The lack of a robust innovation and entrepreneurship ecosystem hinders the retention of creative and entrepreneurial talents. It is necessary to create a regulatory framework for the establishment of business incubators and accelerators, promoting collaboration between universities and companies, and offering fiscal and financial incentives for innovative start-ups and SMEs.
- d) **Talent return programs:** There are few specific programs to facilitate the return of professionals who have emigrated. It is necessary to implement specific programs that offer attractive incentives for professionals trained abroad or in other regions to return, such as grants, job search support, and business establishment facilities. Additionally, creating a network of contacts and opportunities to facilitate the labour and social integration of returnees is essential.
- e) **Quality of life and public services:** The perception of a low quality of life and the lack of high-quality public services can discourage talents from staying or returning. Improving public services by investing in healthcare and education and promoting initiatives that enhance quality of life, such as sustainable urban planning projects and cultural and leisure offerings, is necessary.
- f) **Territorial marketing:** There is a lack of an effective marketing strategy to promote the advantages of living and working in Extremadura. It is indispensable to develop territorial marketing campaigns that highlight the benefits and advantages of the region as a place of residence and work, aimed at both local and international professionals. Collaborating with influencers and media to improve the region's perception at national and international levels is also essential.

In Extremadura, policies aimed at mitigating brain drain are still in their early stages, showing preliminary positive results but remaining insufficient for a comprehensive evaluation.

This report highlights several successful initiatives in Extremadura aimed at retaining talent and fostering innovation, cases that demonstrate significant advances in talent retention and the promotion of research and development in Extremadura. However, and despite progress, there is a need to further improve impact assessment, ensure long-term sustainability and expand programs to address a broader range of professional profiles. Continuous collaboration among regional stakeholders will be crucial to achieve these objectives and improve the situation in the region.

## Section 7: Bibliographical References

- ACCIÓN CONTRA EL HAMBRE (15 de diciembre de 2022). "Jóvenes y empresas extremeñas se unen para potenciar y retener el talento de la región". Available in: <https://accioncontraelhambre.org/es/prensa/jovenes-empresas-extremenase-unen-potenciar-retener-el-talento-la-region>
- Addeo, F., Blanco-Gregory, R., Maddaloni, D. y Moffa, G. (2022). *Prima della migrazione. Esperienze di vita, di studio e di mobilità degli studenti delle università di Salerno e dell'Estremadura*. Collana: Scienze Sociali. Napoli: Paolo Loffredo editore.
- Addeo, F.; Blanco-Gregory, R.; Maddaloni, D.; Moffa, G. (2023). "At the Origins of Migration Choices: A Survey of Students at Two South European Universities". En *Societies*, 13(2), 40, 1-11. <https://doi.org/10.3390/soc13020040>
- Aghion, P., & Howitt, P. (1992). "A Model of Growth through Creative Destruction". *Econometrica*, 60(2), 323-351.
- Alaminos, A. y Santacreu, O. (2010). "La emigración cualificada española en Francia y Alemania". *Papers, Revista de sociología*, 95: 201-211.
- Avveduto, S., Brandi, M. C. & Todisco, E. (A cura di). (2004). "Le migrazioni qualificate tra mobilità e brain drain". *Studi Emigrazione*, 156.
- BBVA Research (2018). El nivel educativo de la población en España y sus regiones: actualización hasta 2016. <http://www.bbvaesearch.com>
- Baláž, V. & Williams, A. M. (2004). "'Been there, done that': International student migration and human capital transfers from the UK to Slovakia". *Population, Space and Place*, 10(3): 217-237. DOI: 10.1002/psp.316.
- Beck, U. (1992). *Risk Society: Towards a New Modernity*. London: Sage Publications Ltd.
- Becker, G.S. (1964) *Human Capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press, Chicago.
- Beltrame, L. (2007). "Realtà e retorica del brain drain in Italia. Stime statistiche, definizioni pubbliche e interventi politici". *Quaderni del dipartimento di Sociologia e Ricerca Sociale*, 35: 1-75. Trento: Università degli Studi di Trento. Dipartimento di Sociologia e Ricerca Sociale.
- Blanco-Gregory, R., Diana, P. y Maddaloni, D. (2019). "Migración cualificada al sur de Europa. Una encuesta comparativa de estudiantes universitarios". In E. Gualda Caballero (Dir.): *Sociedades y fronteras. Actas del IX Congreso Andaluz de Sociología*. Huelva: Universidad de Huelva.
- Blanco-Gregory, R. (2023). "Emigración cualificada en las organizaciones de educación superior". En L. Porto y M.V. Sanagustín (Coords.): *Vulnerabilidades y nuevas demandas sociales: Un enfoque interdisciplinar desde las organizaciones*. (Pp. 40-53). Madrid: Dykinson. ISBN: 978-84-1170-244-7.
- Blanco-Gregory, R. y Cortés-Ruiz, M. (2023). "Genealogy of Depopulation Processes in Spain: A Case Study of Emigration among Young University Students". In *Genealogy*, 7(6), 63, 1-18. DOI: 10.3390/genealogy7030063
- Blanco-Gregory, R. y García-García, Y. (2022). "Una mirada sociológica sobre la emigración cualificada de los jóvenes. El caso de los universitarios extremeños como contribuyentes al fenómeno de la España vaciada". In J.I. Urquijo, J. A. Pérez y M. Sánchez-Oro (Coords.), *La sociedad de Extremadura desde la sociología. Claves para entender una realidad social en transformación*. Cáceres: Servicio de Publicaciones Universidad de Extremadura.
- Blanco-Gregory, R., Maddaloni, D. y Moffa, G. (2016). "Still a Place of Hope? Immigration in the Periphery of Southern Europe in an Age of Crisis". *The International Journal of Interdisciplinary Social and Community Studies*, 11(1), 17-30.
- Bourdieu, P. (2001). *La distinción. Crítica social del gusto*. Bologna: Il mulino (ed. or. *La Distinction. Critique sociale du jugement*, Paris: Les Éditions de Minuit, 1979).
- Brandi, M. C. (2017). "L'emigrazione dei ricercatori italiani in un mondo che cambia". In C. Bonifazi (A cura di): *Migrazioni e integrazioni nell'Italia di oggi*. (Pp. 73-87). Roma: CNR-IRPPS e Publishing.
- Brandi, M. C. & Segnana, M. L. (2008). "Lavorare all'estero: fuga o investimento?" In Consorzio Interuniversitario AlmaLaurea (A cura di): *X Indagine AlmaLaurea sulla condizione occupazionale dei laureati*. Bologna: Il Mulino.

- CaixaBank Research. (2024). *Fichas Comunidades Autónomas: Extremadura*. <https://www.caixabankresearch.com/>
- Consejería de Movilidad, Transporte y Vivienda, Junta de Extremadura. (2022). *Plan de Vivienda de Extremadura 2022-2027*. Junta de Extremadura. Available in: <https://www.juntaex.es/w/plan-de-vivienda-de-extremadura-2022-2027>
- Consejo General del Notariado. *Informe compraventas, préstamos hipotecarios y sociedades*. Available in: [https://www.notariado.org/liferay/c/document\\_library/get\\_file?uuid=5b05f4a2-a988-48e8-9062-caeb1497828f&groupId=2289837](https://www.notariado.org/liferay/c/document_library/get_file?uuid=5b05f4a2-a988-48e8-9062-caeb1497828f&groupId=2289837)
- Cortés, A., Moncó, B. y Betrisey, D. (2015). *Movilidad transnacional de jóvenes españoles y latinoamericanos: Una comparación en contexto de crisis*. Madrid: Centro Reina Sofía sobre Juventud y Adolescencia.
- Cortijo, F. (Director) (2023). *Anuario Energía y Medio Ambiente Extremadura 2023*. *Energía de Extremadura*. Available in: <https://www.energiaextremadura.com>
- Del Campo, S. y Tezanos, J.F. (2008). "La emigración en España". In S. del Campo Urbano y J. F. Tezanos Tortajada (Coords.): *España siglo XXI. La sociedad*. Madrid: Editorial Biblioteca Nueva.
- Del Río Duque, M. L. (2009). "Un análisis de la fuga de cerebros desde la teoría de las redes sociales". *Sociedad y Economía*, 17, 89-113.
- Domingo i Valls, A. y Blanes Llorens, A. (2016). "La nueva emigración española: ¿una generación perdida?". *Panorama Social*, 23, 157-178.
- Domingo i Valls, A., Sabater Coll, A. y Ortega Rivera, E. (2014). "¿Migración neo-hispánica? El impacto de la crisis económica en la emigración española". *Empiria, Revista de Metodología de Ciencias Sociales*, 29, 39-66.
- Eurobarómetro (2016). *Standart Eurobarometer 86 survey (EB86)*. European Union.
- Europa Press (29 de mayo de 2021). "El doctor David Martín recibe la beca Stop Fuga de Cerebros para investigar en Extremadura sobre infertilidad masculina". Available in: <https://www.europapress.es/extremadura/noticia-doctor-david-martin-recibe-beca-stop-fuga-cerebros-investigar-extremadura-infertilidad-masculina-20210529132207.html>
- Fundación COTEC (2023). Mapa del Talento en España 2023: La capacidad de atracción de Alemania. Available in: <https://cotec.es/informes/mapa-del-talento-2023/>
- García Montalvo, J. (2009). "La inserción laboral de los universitarios y el fenómeno de la sobrecualificación en España". *Papeles de economía española*, 119, 172-187.
- Giddens A. (1991). *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge: Polity Press.
- González-Ferrer, A. (2013). "La nueva emigración española. Lo que sabemos y lo que no". *Laboratorio de Alternativas*, 18, 1-19.
- Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: a two-sector analysis. *The American economic review*, 60(1), 126-142.
- IEEX, Instituto de Estadística de Extremadura. (2023). Análisis de la población en Extremadura. Junta de Extremadura. Available in: [http://www.estadisticaextremadura.es/informes/analisis\\_poblacion\\_2023.pdf](http://www.estadisticaextremadura.es/informes/analisis_poblacion_2023.pdf)
- IEEX, Instituto de Estadística de Extremadura. (2024). Extremadura en cifras 2024. Junta de Extremadura. Available in: <https://www.juntaex.es/es/w/extremadura-en-cifras-24?inheritRedirect=true>
- INE, Instituto Nacional de Estadística de España (2015). *Estadística de variaciones residenciales. Bajas por país de destino y edad*. [On line]. Available in: [http://www.ine.es/jaxi/Tabla.htm?path=/t20/p307/a2015/I0/&file=a2\\_30.px&L=0](http://www.ine.es/jaxi/Tabla.htm?path=/t20/p307/a2015/I0/&file=a2_30.px&L=0).
- Junta de Extremadura. Consejería de Agricultura, Desarrollo Rural, Población y Territorio (2020). *Reto demográfico y fijación de la población al territorio. Estrategia para el retorno del talento en Extremadura*. Available in: [http://instituciones.juntaex.es/filescoms/con03/uploaded\\_files/PaginaPrincipal/SecretariaGeneralPoblacionYDR/reto\\_demografico/MedidasYAcciones/RetoDemografico\\_Estrategia\\_RetornoTalento\\_octubre2020.pdf](http://instituciones.juntaex.es/filescoms/con03/uploaded_files/PaginaPrincipal/SecretariaGeneralPoblacionYDR/reto_demografico/MedidasYAcciones/RetoDemografico_Estrategia_RetornoTalento_octubre2020.pdf)
- Jurado Guerrero, T. (2016). "El contexto demográfico. Cada vez menos jóvenes y más diversos". In J. Benedicto (Dir.), *Informe Juventud en España 2016*. Madrid: Instituto de la Juventud.

- King, R. & Ruiz Gelices E. (2003). "International student migration and the European "Year Abroad": effects on European identity and subsequent migration behavior". *Population, Space and Place*, 9(3): 229-252. DOI: 10.1002/ijpg.280.
- Lafleur, J. M. & Stanek, M., (Eds.) (2017). *South-North Migration of EU Citizens in Times of Crisis*. Springer: Cham, Switzerland.
- Machado Gomes, R. (Ed.) (2015). *Fuga de cerebros. Retratos da emigração portuguesa qualificada*. Lisboa: Bertrand.
- Maddaloni, D. (2008). "Lavoro e welfare nell'Europa meridionale: successi e contraddizioni di uno sviluppo dualistico". In G. Ponzini & E. Pugliese (A cura di): *Un sistema di welfare mediterraneo. Rapporto IRPPS-CNR sullo Stato sociale in Italia 2007-2008*. Roma: Donzelli.
- Maddaloni, D. (2017). "Southern European Pathways across the Great Recession". *Athens Journal of Social Sciences*, 4(3), 211-227.
- Maddaloni, D. y Moffa, G. (2019). Migration Flows and Migration Crisis in Southern Europe. In E. Ness, C. Menjivar & M. Ruiz (Eds.): *The Oxford Handbook of Migration Crises*. Oxford-New York: Oxford University Press.
- Ministerio de Universidades. (2023). *Datos y cifras del Sistema Universitario Español. Publicación 2022-2023*. Secretaría General Técnica del Ministerio de Universidades. Available in: [https://www.universidades.gob.es/wp-content/uploads/2023/04/DyC\\_2023\\_web\\_v2.pdf](https://www.universidades.gob.es/wp-content/uploads/2023/04/DyC_2023_web_v2.pdf)
- Moffa, G. (2014). "Lo scenario di riferimento delle nuove migrazioni". In FILEF (A cura di): *Le nuove generazioni tra i nuovi spazi e nuovi tempi delle migrazioni*. Roma: Ediesse.
- Moreno Mínguez, A. (2015). "La empleabilidad de los jóvenes en España: explicando el elevado desempleo juvenil durante la recesión económica". *Revista Internacional de Investigación en Ciencias Sociales*, 11(1), 3-20.
- Moreno Mínguez, A. (2017). "Interpretando la emigración de los jóvenes españoles en un contexto de crisis económica". *Revista de Dialectología y Tradiciones Populares*, 72(1), 23-28.
- Navarrete Moreno, L. (2014). *La emigración de los jóvenes españoles en el contexto de la crisis: Análisis y datos de un fenómeno difícil de cuantificar*. Madrid: Instituto de la Juventud, Ministerio de Sanidad, Servicios Sociales e Igualdad.
- Pochmann, M. (2011). "La fuga de cerebros y la nueva división internacional del trabajo" *Nueva Sociedad*, 233, 98-113.
- Powell, W. W. & Snellman, K. (2004). "The Knowledge Economy". *Annual Review of Sociology*, 30(1), 199-220.
- Pugliese, E. (2014). "L'Italia tra emigrazione e immigrazione: tendenze storiche e recenti". In FILEF (a cura di), *Le nuove generazioni tra i nuovi spazi e nuovi tempi delle migrazioni*. Roma: Ediesse.
- Recchi, E. (2013). *Senza frontiere. La libera circolazione delle persone in Europa*. Bologna: Il mulino.
- Ricucci, R. (2017). *The New Southern European Diaspora: Youth, Unemployment, and Migration*. Lanham: Lexington Books.
- Rodríguez Puertas, R. (2014). La emigración de jóvenes cualificados en España: Una pérdida de capital humano en la Sociedad del Conocimiento. In A. Pérez, N. Castillo y F. Entrena (Eds.), *Gestión de procesos sociales: la experiencia de Cuba, España y México*. Granada: Departamento de Sociología, Universidad de Granada - Ciudad Juárez: Universidad Autónoma de Ciudad Juárez.
- Rooney, D., Hearn, G., & Ninan, A. (2005). *Handbook on the Knowledge Economy*. Cheltenham: Edward Elgar.
- Ruiz-Castillo Ucelay, J. (2007). "Fuga de cerebros. El caso de la investigación científica en economía". *Transatlántica de educación*, 3, 82-87.
- Santos Ortega, A. (2013). "Fuga de cerebros y crisis en España: los jóvenes en el punto de mira de los discursos empresariales". *Áreas, Revista Internacional de Ciencias Sociales*, 32, 125-137.
- Schumpeter, J. A. (1971). *Capitalism, Socialism and Democracy*. Madrid: Aguilar.
- Secretaría General de Economía y Comercio. Junta de Extremadura (2023). *Empleo por sectores en Extremadura. Informe 2022*. Available in: <https://www.juntaex.es/documents/77055/621656/Publicaci%C3%B3n+Evoluci%C3%B3n+del+empleo+por+sectores+en+Extremadura.+Informe+2022.pdf/84db4457-f5f1-fac3-ca2c-73434cc9e7f9?t=1680611534308>

Solow, R. M. (1976). *Teoría del Crecimiento. Una exposición*. (Última edición: 2018). México: FCE.

Tomei, G. (A cura di) (2017). *Cervelli in circolo. Trasformazioni sociali e nuove migrazioni qualificate*. Milano: FrancoAngeli.

Triandafyllidou, A. & Gropas, R. (2014). "Voting with Their Feet": Highly Skilled Emigrants from Southern Europe'. *American Behavioral Scientist*, 58(12), 1614-1633. DOI: 10.1177/0002764214534665.

Universidad de Extremadura (2024). *Programa de internacionalización y retorno del talento (PIRT)*. Available in: <https://www.unex.es/organizacion/gobierno/vicerrectorados/vicealumn/funciones/practicas-y-empleo/pirt-convocatoria-2024>.

Urry, J. (2002). *Sociology beyond Societies. Mobilities for the Twenty-First Century*. London: Taylor & Francis.

Urry, J. (2007). *Mobilities*. Cambridge-Malden (MA): Polity Press.