

# Revista CENTRA de Ciencias Sociales

**CENTRA Journal of Social Sciences**

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## Information on CENTRA's scientific publications in social sciences

The **Andalusian Studies Center Public Foundation** -CENTRA-, attached to the Consejería de la Presidencia, Interior, Diálogo Social y Simplificación Administrativa of the Junta de Andalucía, is a scientific and cultural institution that already has a history of more than twenty years, and which has as its foundational objectives the promotion of scientific research and the generation of knowledge about the social, economic and cultural reality of Andalusia.

In accordance with these purposes and its nature, **CENTRA** has created ex novo in 2021 a line of scientific publications in the field of social sciences, in accordance with the universalist canons of scientific communication, made up of three book collections (Actualidad, Biblioteca de Investigación y Enfoques) and the CENTRA Journal of Social Sciences.

The **ACTUALIDAD** collection addresses issues of relevance and interest in the contemporary Andalusian social and political reality linked to the broader context of Spanish society, the European Union and, in short, global dynamics. It is characterized by a determined orientation to present empirical evidence of the phenomena considered, linking the data provided to its theoretical and explanatory analysis.

Even though it is a collection linked to the scientific community and research in the social sciences, it is also conceived under the broadest idea of dissemination for an audience that is not an expert in the topics covered. The collection, which has been published without interruption since 2005, is now structured according to a selection process for original manuscripts in accordance with universalist criteria of scientific quality and anonymous evaluation by academic peers external to CENTRA. It is available in digital format and is accessible by free download from the website of the Center for Andalusian Studies.

The newly created **BIBLIOTECA DE INVESTIGACIÓN** collection is made up of monographic research papers from different areas of knowledge in the social sciences. It therefore has the objective of publishing the results of exhaustive investigations in accordance with the standardized criteria of communication. In this way, this collection also allows those doctoral theses in the field of social sciences that meet these criteria to be published in it and that they are presented in a format compatible with editorial standards and the established length.

The **ENFOQUES** collection, also created ex novo, is aimed at bringing together under the same volume the academic results of seminars, scientific conferences, etc., that are the consequence of some academic initiative for research or debate whose result implies a collective work directed by an editor. or editors. This group nature does not imply any reduction in the commitment to the quality and scientific nature of the collection, since the generation and validation of scientific knowledge is a joint and community process that, as the frontiers of the social sciences have advanced, is becoming more and more necessary. However, this collective nature of the works published here does require scrupulous work by the editor or editors who coordinate the initiative, supervise the work of the different contributions, evaluate their substantive results, and integrate them into the unitary whole that the publication implies. final published manuscript.

The **CLÁSICOS DE LAS CIENCIAS SOCIALES** collection presents in Spanish works of undisputed reference previously published in a foreign language. It includes both modern and contemporary classic works and authors. Given its unique nature, this collection is not subject to anonymous peer review processes of a universalist nature. Notwithstanding this distinctive feature, the decision regarding the titles to be published must be approved by the CENTRA Editorial Board of Social Sciences after considering the relevance of the work to this collection. The Editorial Board may also receive proposals for publication in this collection from scholars outside the board.

Finally, and likewise newly created, the **CENTRA Journal of Social Sciences** is a semi-annual scientific publication for all areas of this field of scientific knowledge that is published in Spanish and English in electronic format, freely accessible and downloadable, and in Spanish in paper support. The journal has a miscellaneous nature for the social sciences as a whole that does not exclude the possibility of publishing debate sections and specific numbers of a monographic nature that, in any case, will be governed by the same canons of universalism and anonymous evaluation of scientific communication. than the rest of the texts presented. The journal is open to unpublished texts, written with the utmost scientific rigor, coming from the broad scientific community, both nationally and internationally.

In order to provide content to all this new initiative of scientific publications, and scrupulously guarantee the principles of scientific communication, there is an interdisciplinary Editorial Board made up of prestigious professors from universities and national and international research organizations.



# **ARTICLES**

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## ARTÍCULOS

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## ARTICLES/ARTÍCULOS

# Radiography of Religious Minorities in Spain: An Estimation of Their Size and Characteristics

Radiografía de las minorías religiosas en España: una estimación de su tamaño y sus características

**Jacobo Muñoz Comet**

National Distance Education University (UNED), Spain  
[jmcomet@poli.uned.es](mailto:jmcomet@poli.uned.es)

**Juan Ignacio Martínez Pastor**

National Distance Education University (UNED), Spain  
[jimartinez@poli.uned.es](mailto:jimartinez@poli.uned.es)

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## ABSTRACT

This article examines religious minorities in Spain using multiple data sources. First, it analyses six nationally representative opinion surveys conducted between 2018 and 2023, discussing their methodological limitations. According to these surveys, between 4% and 6.3% of residents of legal age in Spain identify with a non-Catholic religion. Secondly, data from the Labour Force Survey (Encuesta de Población Activa – EPA) are analysed, suggesting that the actual proportion of religious minorities may be twice as high. When including minors, this figure could reach up to 12.6% of the population (approximately 6.1 million people) by 2024, with 2.6 million identifying as Muslim. The opinion surveys reveal a distinct socio-demographic profile for religious minorities. However, due to the statistical underrepresentation of this group, there is an urgent need for new data sources that provide more accurate and comprehensive information.

**KEYWORDS:** religion; minorities; faiths; religious beliefs; methodology; immigration; statistical sources; quantification; Muslims; Catholics.

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## ABSTRACT

Este artículo estudia las minorías religiosas en España mediante diferentes fuentes de datos. Por un lado, se analizan seis estudios de opinión —representativos a nivel nacional y realizados entre 2018–2023— y se discuten las limitaciones metodológicas que plantean. Según estas encuestas, entre un 4 y un 6,3% de los residentes en España mayores de edad pertenece a alguna religión no católica. Por otro lado, se explotan los datos de la EPA, cuyo análisis apunta a que el porcentaje real de minorías religiosas puede ser el doble. Al incluir a los menores de edad, la cifra podría alcanzar en 2024 hasta un 12,6% de la población (6,1 millones de personas), de las cuales 2,6 millones serían musulmanas. Los estudios de opinión analizados muestran un perfil sociodemográfico de las minorías religiosas singular. Sin embargo, ante los problemas de infrarrepresentación estadística de este colectivo, urgen nuevas fuentes de datos más precisas y adecuadas.

**KEYWORDS:** religión; minorías; confesiones; creencias religiosas; metodología; inmigración; fuentes estadísticas; cuantificación; musulmanes; católicos.

## 1. Introduction

Spain's cultural richness has been shaped over the centuries by a diversity of influences, including religious traditions. Although Catholicism remains the religion with the deepest historical roots, the last few decades have witnessed an undeniable transformation. This change has been driven primarily, though not exclusively, by the arrival of several million immigrants since the late twentieth century, mainly from Latin America, Eastern Europe and Africa. As a result, Catholicism has come to coexist with a variety of other religions.

Indeed, between 1996 and 2008, Spain was the second-largest recipient of immigrants worldwide, surpassed only by the United States (Fernández-Huertas, 2021). In relative terms, the increase in the proportion of immigrants in Spain during this period has been unprecedented. According to the Continuous Population Statistics compiled by the National Institute of Statistics (INE), while foreign-born individuals constituted 3% of the resident population in 1998, by the end of 2024 this figure had risen to 18.4%, amounting to approximately 9 million immigrants.

The phenomenon of immigration, alongside the legal recognition of major religious minorities and the continued presence of other minority religions already practised by non-Catholic believers in Spain, has contributed to shaping a dynamic and evolving religious landscape. From Islam to various Christian denominations and other spiritual traditions, religious minorities play a significant role in constructing contemporary Spanish identity. According to the Observatory of Religious Pluralism in Spain, in 2024 there were 30,949 places of worship across

the country, 8,016 of which belonged to 17 minority religious denominations, understood here as non-Catholic faiths.

This study sets out several objectives. First, it aims to determine the proportion of the resident population in Spain that adheres to a religious minority, that is, a non-Catholic faith. Second, it explores a methodological question: whether opinion surveys, which typically include questions on respondents' religiosity, underestimate the size of this group. In addressing this issue, the Labour Force Survey (*Encuesta de Población Activa – EPA*) is used as an alternative statistical source. The third objective is to describe the socio-demographic characteristics and level of religiosity among members of religious minorities, compared with Catholics and the non-religious population.

This research is novel in several respects. On the one hand, it uses multiple data sources to analyse religious minorities. Datasets are employed from nationally representative surveys, which enhances the reliability of the information provided compared with other regular surveys that have studied religious minorities in Spain. On the other hand, by using multiple surveys we are able to assess the extent to which their estimates vary. This serves as a robustness check of the methodology and enables comparisons with figures reported by religious organisations or other relevant institutions. In sum, this article aims to provide the most reliable quantification of religious minorities in Spain to date. It also seeks to evaluate the robustness of opinion survey data regarding this topic, a task that, to our knowledge, has not previously been undertaken.

The findings of this study may have direct implications for public policy and social cohesion, informing decisions on the equitable allocation of public resources, the design of more effective integration policies and the prevention of discrimination. These efforts depend fundamentally on accurate data concerning the religious composition of society. For instance, understanding the distribution and size of minority groups can help identify areas of social vulnerability and support the implementation of inclusive and effective evidence-based measures.

The article is structured into three main sections. The first presents a review of existing studies on this phenomenon and discusses the methodological challenges involved in quantifying religious minorities in Spain. The second outlines the data sources used in this research, the methodology for estimating the group and the variables employed in characterising it. The third section presents the study's findings. Finally, the article presents the study's conclusions along with its limitations.

## 2. Background and difficulties in measurement

The specialised literature includes several lines of research concerned with religious plurality. Although in Spain the most established strand focuses on the diversity of beliefs and affiliation to denominations other than the majority (Díez de Velasco,

2010; Pérez Agote, 2015; Astor *et al.*, 2017), recent years have seen the emergence of studies analysing the evolution of the religiosity of immigrant-origin populations and their descendants within the host society (Vicente Torrado and Urrutia Usua, 2023). In countries with a much longer history of immigration, such research is more common (Fleischmann and Phalet, 2012; Cheung, 2016). Similarly, there is a body of work examining the role of religiosity in the socio-economic integration of both native and immigrant populations (Heath and Martin, 2013; Fullin, 2016; Khattab and Hussein; 2018; Koopmans *et al.*, 2019).

Academic research conducted thus far in Spain has certain limitations. Specifically, most studies on religious minorities have employed qualitative approaches, whereas quantitative contributions remain scarce. Below is a review of the estimated figures for religious minorities in Spain, their characteristics and the methodological challenges involved in studying this group.

### 2.1. What are the estimated figures?

Quantifying and analysing the characteristics of religious minorities is a complex task (Muñoz Comet, 2022). Firstly, there are no censuses or official records detailing the religiosity of the population in Spain, and where such data exist, they are neither exhaustive nor publicly accessible. Furthermore, as religious minorities constitute a very specific group, it is challenging to obtain survey data that include representative samples of two overlapping social minorities: immigrants and individuals belonging to minority religions.

Nevertheless, several organisations have attempted to estimate the number of inhabitants in Spain who profess religions other than Catholicism. One such organisation is the Observatory of Religious Pluralism in Spain, which operates under the Pluralism and Coexistence Foundation. This institution is a public body affiliated with the Ministry of the Presidency, Justice and Relations with the Courts, with the primary objective of studying and managing religious pluralism. The Observatory's database includes information from three Centre for Sociological Research (Centro de Investigaciones Sociológicas – CIS) surveys conducted in 1998, 2008 and 2018. According to the most recent survey<sup>1</sup>, which focuses on religiosity and is also used in this study, 5.6% of the population aged 18 and over residing in Spain belongs to a minority religion. Based on the Continuous Register Statistics for that year, this corresponds to approximately 2.2 million adults.

Other institutions linked to specific religions provide their own estimates of the number of adherents in Spain. For example, the Union of Islamic Communities of Spain (UCIDE), through the Observatorio Andalusi, estimates that in 2023 there were 2.4 million Muslims living in Spain. Their calculation method classifies as Muslims all inhabitants originating from countries considered predominantly Muslim. They justify this approach by stating:

Although Muslims reside in countries worldwide in varying proportions, either as majorities or minorities, this study utilises the absolute number of 29 nationalities, having verified that this figure compensates for Muslim minorities primarily immigrated from Europe and the Americas, such as Latin American Muslims (Observatorio Andalusi-UCIDE, 2024, p. 5, [translation]).

The Observatorio Andalusi's estimate also includes Hispanic Muslims, a group comprising residents of Ceuta and Melilla, naturalised Muslims and descendants of Muslims.

The Federation of Evangelical Religious Entities of Spain (FEDERE), on the other hand, estimates that there are between 1.7 and 2 million Protestants in the country (FEDERE, 2023). This figure is a rough estimate derived from counting both attendees of evangelical churches and Protestants, including non-congregating evangelicals, who reside in Spain for at least six months per year.

Orthodox Christians represent another sizeable minority in Spain, primarily due to immigration from Eastern European countries where Orthodoxy is the dominant faith. Considering residents from Romania, who are mostly Orthodox, alongside nationals from Bulgaria, Serbia, Ukraine and Russia, it is reasonable to estimate that Spain is home to around one million Orthodox Christians, based on the 2022 Continuous Register figures.

Regarding other religious minorities, a projection by the Pew Research Center using 2010 data estimated that by 2020 there would be approximately 190,000 individuals adhering to religions such as Judaism, Hinduism, Buddhism and others. Data from the Observatory of Religious Pluralism in Spain, drawing on the 2018 CIS survey, suggests that 1% of adult residents identify with these other religions, amounting to around 384,000 people.

As has been observed, estimates for the number of people professing a minority religion in Spain vary significantly. According to CIS data, this figure is 2.2 million adults. However, when including estimates from Muslim and evangelical organisations and additional data from the Continuous Register and surveys, the total ranges from approximately 5.3 to 5.8 million, which also accounts for minors in some denominations. The results section will clarify which of these figures aligns most closely with those obtained from surveys using representative samples of Spain's population.

## 2.2. What is their composition?

Despite the paucity of data on religious minorities, sociology has made significant efforts to analyse their characteristics. In this regard, the study conducted by Alfonso Pérez Agote and Jose Santiago (2009), based on two surveys carried out by the CIS in 2008, is particularly noteworthy.<sup>2</sup> The first survey included interviews

with 2,000 adults, of whom 10% were migrants. The second survey was specifically designed to study religious minorities. A sample of 200 entities registered in the Ministry of Justice's Register of Religious Entities was drawn, with one leader and three additional members from each entity interviewed. In total, 736 individuals participated in the survey: 487 Evangelicals, 184 Muslims and 65 from other minority religions.

In relation to the objectives of the present research, the key conclusion of Pérez Agote and Santiago's study is that the degree of religiosity among immigrants was higher than that of the native population, across several indicators. It is important to note that the immigrant population considered in this study belonged to one of the minority religions. Regarding the socio-demographic characteristics of individuals affiliated with minority religions, the majority were men (57%) and under the age of 45 (63%). Half (50%) of the participants held only Spanish nationality. On a left–right ideological scale ranging from 1 (far left) to 10 (far right), the average score was 4.5, indicating a tendency towards the moderate left. As for educational attainment, 31% had completed primary education or less, while 34% held university degrees.

Among the initiatives of the Pluralism and Coexistence Foundation are two studies conducted by the Observatory of Religious Pluralism in Spain. The first is the "Survey on the opinions and attitudes of Spaniards towards the daily dimension of religiosity and its public management", conducted in two editions (2011 and 2012). The second is the "Study on the perception of discrimination on religious grounds in the workplace", carried out through a survey in 2022 and targeting individuals belonging to religious minorities. This survey received responses from 1,986 individuals, most of whom were Jehovah's Witnesses, Muslims and Adventists. As it was not a probabilistic survey, based on non-random selection methods – mass emails were sent to local minority religious communities across Spain – the results must be interpreted with considerable caution, as must those of the study by Pérez Agote and Santiago.

Nonetheless, this study provides a detailed account of the socio-demographic profile of respondents, all of whom belonged to religious minorities. The majority were women (53%), university graduates (38%) or held upper secondary qualifications (35%), and were born in Spain (70%). Regarding religiosity, 62% described themselves as very or extremely religious, and 75% reported attending religious events at least once a week. The report itself compares its findings with those of the 2018 CIS survey (Survey 3194), which used a probabilistic sample. It concludes that university graduates are overrepresented in the Observatory's sample, those born outside Spain are underrepresented, and, on average, respondents were more religious than those in the CIS survey.



### 2.3. Difficulties in quantifying and analysing religious minorities

Attempts to quantify and understand the characteristics of religious minorities in Spain face multiple challenges. Ideally, a national register would exist containing information on individuals' religious affiliation along with some basic demographic characteristics. However, such a register is not currently available. As a result, efforts to measure the size and profile of these populations are necessarily partial and approximate. One of the most valid approaches, at least in theory, would be to conduct a probabilistic survey of the resident population. By asking respondents about their religious affiliation, this method would allow for precise estimations and the calculation of confidence intervals. Although this is theoretically the most robust method, in practice it presents significant limitations: certain groups are less likely to respond – even when the survey is part of the National Statistical Plan and participation is mandatory – or are more difficult to locate, despite repeated attempts by interviewers to contact selected households through various means. This issue is explicitly acknowledged in the methodological note of CIS Survey 3194 (2018), which focused on religion.

Religious minorities are often underrepresented in this type of survey, as they frequently overlap with other hard-to-reach populations, such as immigrants, who typically display lower response rates than the native-born population. While survey designers sometimes correct for such underrepresentation by weighting their data, these adjustments are rarely based on religious affiliation, which is the key variable of interest here.

Consequently, several minority religious organisations – such as the aforementioned Observatorio Andalusí – have sought to estimate the number of adherents through alternative means. One such method involves inferring religious affiliation from the national origin of Spanish residents. This is a straight-forward approach that entails assigning a specific religion to individuals originating from countries where that religion is dominant. This is typically done using data from the Municipal Register of Inhabitants. However, this method has a significant drawback: it assumes religious affiliation based solely on country of origin. This means individuals may be incorrectly classified as adherents of a particular faith, despite possibly belonging to another religion or identifying as non-believers.

Estimating the proportion of individuals who claim affiliation with a minority religion is one issue; identifying their characteristics is another. The latter requires a substantial number of interviews in order to draw reliable conclusions within a reasonable margin of error. Yet, in standard surveys, the number of respondents from religious minorities is typically too small to allow for meaningful socio-demographic analysis. This is a classic example of the “small-*N*” problem. Therefore, when a deeper analysis of their characteristics is required, researchers often resort to *ad hoc* surveys specifically targeting members of those religious minorities.

Such was the case with CIS Survey 2759, conducted in 2008. As outlined previously, this survey focused on individuals participating in worship activities at religious in-

stitutions recorded in the Register of Religious Entities, kept by the Directorate General for Religious Affairs. This approach has the advantage of increasing the number of respondents from minority groups. However, the challenge lies in determining the extent to which the interviewees are representative of these minority groups. Because the respondents were recruited from worship centres – and often included leaders of those centres – it is likely that they were significantly more religiously active than other members of the same faiths who do not regularly attend places of worship.

### 3. Data and methodology

#### 3.1. Data sources

##### 3.1.1. *Opinion surveys*

Despite the aforementioned limitations, opinion surveys remain the primary statistical source for identifying and quantitatively describing individuals who profess a minority religion in Spain. Several studies in recent years have gathered relevant data, and most agree on certain key points. Typically, these are surveys aimed at the entire resident population of Spain, with representative samples ranging from 2,000 to 3,000 respondents. To analyse religious minorities, this research draws on six surveys conducted between 2018 and 2023<sup>3</sup>: the Spanish General Social Survey (Encuesta Social General Española – ESGE, 2023), the Health Barometer (Barómetro Sanitario – BS, 2023), the European Social Survey (ESS, 2022), the International Social Survey Programme (ISSP, 2018), the European Values Study (EVS, 2018) and the Innovarómetro (INV, 2018).

All these surveys target the population residing in Spain aged 18 or over, except for the ESS, which includes individuals aged 16 and 17. They represent the most recent and relevant sources available for approaching the study of religious minorities in Spain. These surveys make it possible to estimate the proportion of the resident population that identifies with a minority religion. However, each survey has unique characteristics that may influence the estimates produced (see Table 1).

The Spanish General Social Survey (ESGE) is a survey conducted by the Centre for Sociological Research (CIS) and has been carried out four times since 2013, with the latest edition in 2023. Although it is not specifically focused on religious beliefs or practices<sup>4</sup>, two relevant questions are included. The first is: “How do you define yourself in religious matters?” Answer options include Catholic, several minority denominations (such as Protestant, Orthodox, other Christian de-

nominations, Jewish, Muslim, Buddhist, Hindu and other Asian religions) and the catch-all category “Other, please specify”. This question format is commonly used in studies addressing religious affiliation, although variations exist – such as distinguishing between practising and non-practising Catholics, or differentiating among those who profess no religion (e.g., agnostics, atheists, non-believers or those who respond with “don’t know” or provide no answer).

The second ESGE question relates to religious practice: “How often do you attend religious services or ceremonies, excluding special occasions such as weddings, baptisms or funerals?” Answer options offer eight levels of frequency: several times a week, two to three times a week, once a week, once a month, several times a year, once a year, less than once a year and never. As with the previous question, this structure is similar to those used in other surveys addressing religious practice.

The Health Barometer (BS) – also conducted by the CIS, on behalf of the Ministry of Health – has been in place for nearly 30 years, typically running three waves per year. Its key advantage is its larger sample size than other surveys. Over 10,000 respondents participated in the three 2023 editions, with approximately 500 individuals falling into the usually very small religious minority category. However, the BS only asks about religious belief and, unlike the ESGE, collapses all non-Catholic affiliations into a single category (“believer of another religion”).

The European Social Survey (ESS), a European Commission initiative launched in 2002 and conducted biennially, completed its tenth wave in 2022. In Spain, the CIS is responsible for conducting the survey. The added value of the ESS lies in the fact that, although it covers a range of social and political issues, it also includes questions on religion, such as beliefs, attendance at religious services, degree of religiosity and frequency of prayer. Notably, its affiliation question is phrased differently to those in the ESGE or the BS (“What religion do you belong to?”), something that may affect responses. With regard to the question on the frequency of prayer, seven response options are provided, ranging from “never” to “every day”. For religiosity, respondents rate themselves on a 0–10 scale based on the following question: “Regardless of whether you belong to a particular religion, to what extent do you consider yourself a religious person?”

The International Social Survey Programme (ISSP), in collaboration with the CIS, arguably provides the most comprehensive data for analysing religiosity in Spain. Each year, the survey focuses on a specific topic, with subjects being revisited every ten years. Accordingly, the 2018 edition centred on religion, enabling long-term comparisons of religious trends in Spain using data from the 1998 and 2008 surveys. However, as with most surveys, the main limitation of the ISSP in

analysing religious minorities lies in the small sample size of this subgroup (100 individuals), which hinders a more in-depth analysis of their characteristics.

Two additional surveys from 2018 are the European Values Study (EVS) and the Innovarómetro (INV). The former is a private European initiative offering insights into religious beliefs and practices, though its data on religious minorities is limited (just 49 individuals in the sample). The INV, by contrast, conducted by the CIS, features a larger overall sample. However, similar to the BS, it does not disaggregate non-Catholic believers by specific denomination, limiting its usefulness for studying religious diversity in detail.

**Table 1**  
*Statistical sources with direct information on religious denominations*

Survey	Organism	Year	Sample size	Minorities subsample	Minorities category	Question
Spanish General Social Survey (ESGE)	Centre for Sociological Research (CIS)	2023	2,254	131	Disaggregated	How do you define yourself in religious matters?
Health Barometer (BS)	CIS – Ministry of Health	2023	10,377	453	Aggregated	How do you define yourself in religious matters?
European Social Survey (ESS)	CIS – EU	2022	2,283	113	Disaggregated	What religion do you belong to?
International Social Survey Programme (ISSP)	CIS – ISSP	2018	1,733	100	Disaggregated	How do you define yourself in religious matters?
European Values Study (EVS)	University of Deusto – EVS Foundation	2018	1,209	49	Disaggregated	Do you belong to any religion?
Innovarómetro (INV)	CIS	2018	6,308	320	Aggregated	How do you define yourself in religious matters?

Source: own elaboration based on the statistical sources.

3.1.2. *The Labour Force Survey*

In addition to opinion surveys, this research employs microdata from the Labour Force Survey (EPA) to provide an alternative estimate of religious minorities in Spain. The EPA, conducted quarterly by the National Institute of Statistics, surveys approximately 65,000 households (around 160,000 individuals). The primary reason for choosing the EPA over other sources such as the Municipal Register of Inhabitants or the Census lies in its inclusion, since 2021, of information on the country of birth of respondents' parents. This allows us to identify individuals born in Spain whose parents (at least one) originate from a foreign country.

Using EPA data, we will produce two estimates: one to compare with opinion surveys (specifically the 2023 ESGE) and another to calculate the proportion of individuals belonging to religious minorities in Spain using the most up-to-date data available. In both cases, the same procedure will be followed. For the first comparison, we will use data from the first quarter of 2022, as the last ESGE sample was based on the Continuous Register as of 1 January 2022. As with the ESGE, this analysis will focus on the adult population (aged 18 and over). For the second objective, we will draw on the most recent EPA data available at the time of writing (third quarter of 2024), and in this case, we will include the entire resident population, including minors.

### 3.2. Analytical strategy

#### 3.2.1. *Estimation of religious minorities*

To estimate the proportion of religious minorities in Spain, we first consult six opinion surveys, each of which provides direct data on individuals' religious affiliation<sup>5</sup>. Subsequently, to assess the accuracy of these estimates, we calculate the percentage this population comprises using data from the EPA. For this purpose, we analyse separately (A) the immigrant population and (B) the native population.

(A) This study assumes that the religious composition of individuals who emigrate from a given country is broadly similar to that of those who remain in the country of origin. Empirical evidence on this point is mixed and inconclusive (see Connor, 2008; Norris and Inglehart, 2012; Guveli, 2015). In general, research suggests that over time the religiosity of immigrants tends to converge with that of the host population. However, such studies primarily address religious belief and practice, rather than affiliation itself, which tends to remain relatively stable. Therefore, it is reasonable to assume that religious affiliation among emigrants does not differ substantially from that of the population in their countries of origin.

Based on this assumption, we have weighted the immigrant population residing in Spain according to the percentage of non-Catholic religious adherents in their respective countries of origin (e.g., Protestants, Orthodox Christians, Muslims, Buddhists). The sources used to obtain these estimates include data from the Ministry of Foreign Affairs, European Union and Cooperation, the Pew Research Center, and, to a lesser extent, other official statistical bodies. For instance, if approximately 20% of Ecuador's population belongs to a non-Catholic religious group, then in our calculations we assume that 20% of Ecuadorians residing in Spain are affiliated with a minority religion.

In addition, studies such as Fleischmann (2022) show that Muslim minorities are more likely to transmit their religion to their children (born in the host country) than are Christian immigrants or the native population. As a result, in our calculations, we include as Muslim those individuals born in Spain who have at least one parent from a predominantly Muslim country, weighted by the proportion of Muslims in the country of origin.

(B) The estimation of religious minorities among the native population is derived indirectly from the above calculations. The 2023 ESGE estimates that religious minorities in Spain consist of 40% native individuals and 60% immigrants. Thus, once we calculate the share of immigrants belonging to minority religious groups, we can infer the corresponding native share using this proportion. However, the 40/60 ratio has been adjusted due to overrepresentation of the native population in the ESGE sample. While the EPA (Q1 2024) estimates that immigrants represent 16.5% of Spain's adult population, the ESGE places this figure at only 14.1%, meaning that immigrants are underrepresented by 17.6% in the ESGE. This discrepancy has been accounted for by adjusting the immigrant/native proportion among religious minorities to 36/64 instead of 40/60. It is important to note that the estimated native share excludes individuals already counted in category (A), i.e., those with at least one parent from a predominantly Muslim country.

### *3.2.2. Analysis of characteristics*

Following the comparison of estimates derived from the various data sources, the second part of this research focuses on analysing the socio-demographic characteristics of religious minorities. This analysis will be conducted using the six selected opinion surveys. Specifically, a comparative approach will be adopted across three groups: i) people who identify as believers of a religion other than Catholicism; ii) Catholic believers, both practising and non-practising; and iii) the remainder of the population, including non-believers, agnostics, atheists, those indifferent to religion, and those who responded "don't know" or gave no answer.

The comparison will focus on the socio-demographic profile of the groups and on their religious characteristics. In relation to socio-demographic attributes, the following variables will be included: gender, average age, country of birth (Spain vs abroad), educational attainment (university studies vs other; primary education or less vs other) and ideological self-placement from 0 (far left) to 10 (far right). Regarding religious characteristics, the analysis will cover degree of religiosity (0 = not at all religious; 10 = extremely religious); frequency of attendance at religious services or ceremonies, excluding special occasions (with a distinction between those attending at least once a week vs less frequently); and frequency of prayer (at least once a week vs less often).

Analyses will be conducted using a 95% confidence level, taking into account margins of error and confidence intervals, in order to assess the statistical significance of the differences observed between the three groups.

## 4. Results

### 4.1. Calculation of religious minorities from opinion surveys

Table 2 presents the estimates provided by the selected opinion surveys regarding the size of religious minorities in Spain. Where available, data is disaggregated by major non-Catholic religious denominations. Overall, these sources suggest that approximately 5% of the population residing in Spain identifies with a religious denomination other than Catholicism.

However, estimates vary: from 4% according to the European Values Study (EVS) to 6.3% in the International Social Survey Programme (ISSP), both based on data from 2018. This translates to a range of 1.5 to 2.4 million adults in Spain affiliated with a minority religion during that year<sup>6</sup>. Looking at more recent data from 2023, the figures range from 6% according to the Spanish General Social Survey (ESGE) to 4.5% in the Health Barometer (BS), representing between 2.4 and 1.8 million individuals, respectively<sup>7</sup>. It is important to emphasise that these figures, derived from surveys, are subject to a margin of error (reported in square brackets in Table 2). For instance, the 2023 ESGE estimates that 6% of adults in Spain belong to a religious minority, but given the margin of error, we can state with 95% confidence that the actual value lies between 5% and 7%. This would correspond to a population between 2.0 and 2.8 million people.

Discrepancies between surveys become more pronounced when examining specific religious denominations. A particularly illustrative example is the category of Christians who do not belong to either the Catholic or Protestant churches: the EVS estimates this group at just 0.1% of the population, while the ESGE places it significantly higher at 1.4%. A similar discrepancy appears with Protestants, whose estimated share ranges from 0.3% in the EVS to 2% in the ISSP.

Several factors may account for these differences, including the year of data collection, the age of the surveyed population and the exact wording of the survey questions. Another critical factor is the size of the subsample of individuals belonging to minority religions. These subsamples are typically small, often with margins of error as high as  $\pm 1.1$  percentage points for small groups. Increasing the sample size of these subsamples would improve the precision of the estimates and likely reduce variability between surveys.

**Table 2**  
*Estimation of religious minorities in Spain based on opinion surveys. Population aged 18 and over*

	ESGE (2023)	BS (2023)	ESS (2022)	ISSP (2018)	EVS (2018)	INNOVA. (2018)
Religious minorities	6.0 [5.0–7.0]	4.5 [4.1–4.9]	5.0 [4.1–5.9]	6.3 [5.2–7.4]	4.0 [2.9–5.1]	5.0 [4.5–5.5]
Muslims	1.5 [1.0–2.0]		1.1 [0.7–1.5]	1.7 [1.1–2.3]	1.8 [1.1–2.6]	
Protestants	1.0 [0.6–1.4]		0.6 [0.3–0.9]	2.0 [1.3–2.7]	0.3 [0.0–0.6]	
Other Christians*	1.4 [0.9–1.9]		0.9 [0.5–1.3]	0.3 [0.0–0.6]	0.1 [0.0–0.3]	
Orthodox Christians	0.7 [0.4–1.0]		0.9 [0.5–1.3]	1.2 [0.7–1.7]	0.7 [0.2–1.2]	
Other minorities**	1.4 [0.9–1.9]		1.5 [1.0–2.0]	1.1 [0.6–1.6]	1.1 [0.5–1.7]	
Catholics	53.8 [51.7–55.9]	50.5 [49.5–51.5]	44.9 [42.9–46.9]	63.2 [60.9–65.5]	60.3 [57.5–63.1]	63.8 [62.6–65.0]
Remainder of the pop- ulation	40.2 [38.2–42.2]	45.0 [44.0–46.0]	50.1 [48.1–52.2]	30.5 [28.3–32.7]	35.7 [33.0–38.4]	31.2 [30.1–32.3]
	100	100	100	100	100	100

Note: Confidence intervals are shown in square brackets.  
\*Primarily evangelical.  
\*\*Includes Jews, Buddhists, Hindus, Jehovah’s Witnesses and adherents of other faiths.  
Source: own elaboration based on the statistical sources.

4.2. Alternative estimate using the EPA

Below we present the results obtained from the Labour Force Survey (EPA) regarding the estimation of religious minorities in Spain (Table 3). Firstly, our own calculations based on the first quarter of 2022 allow for a comparison with the estimate from the latest ESGE, which reports that religious minorities constitute 6.0% of the adult population – equivalent to approximately 2.4 million individuals. According to the EPA, however, the proportion is significantly higher: 11.9%, or roughly 4.6 million people. This total includes 3.5% Muslims, 4.5% immigrants from other religious minorities and 3.9% natives who also belong to minority religious group. These figures suggest that the ESGE – and, by extension, the other opinion surveys – underestimate the size of religious minorities in Spain by nearly half.

Secondly, we calculated the percentage of religious minorities within the total resident population in Spain, including minors, using EPA data from the third quarter of 2024. This figure rises to 12.6% of the population, amounting to approximately 6.1 million people, of which an estimated 2.6 million are Muslims. Non-Muslim religious minorities are estimated at around 3.5 million people, with the total population comprising 4.8% immigrants and 2.4% natives affiliated with these faiths.



As noted earlier, it is essential to take into account the margin of error associated with the EPA-based estimates. In this case, we can affirm with 95% confidence that religious minorities represent between 12.4% and 12.8% of all Spanish residents. This relatively narrow confidence interval stands in stark contrast to the wider margins typically observed in opinion surveys and is primarily attributable to the significantly larger sample size used by the EPA – 119,728 observations in the third quarter of 2024 – allowing for much greater precision in the estimates.

**Table 3**  
*Estimation of religious minorities in Spain based on the EPA*

	ESGE 2023 (18+ years)		EPA Q1 2022 (18+ years)		EPA Q3 2024 (entire population)	
	Abs. no.	%	Abs. no.	%	Abs. no.	%
Muslims of migrant origin			1,368,818	3.5	2,626,283	5.4
Born abroad			1,207,600		1,655,598	
Both parents born abroad			73,339		732,186	
Father only born abroad			48,393		102,134	
Mother only born abroad			39,487		136,364	
Immigrants of other religions			1,743,766	4.5	2,316,084	4.8
Natives of other religions*			1,498,925	3.9	1,167,913	2.4
TOTAL MINORITIES	2,366,344	6.0	4,611,509	11.9	6,110,281	12.6
Population of Spain**	39,389,072	100	38,774,315	100	48,490,116	100
Sample size (N)	2,254		109,620		119,728	

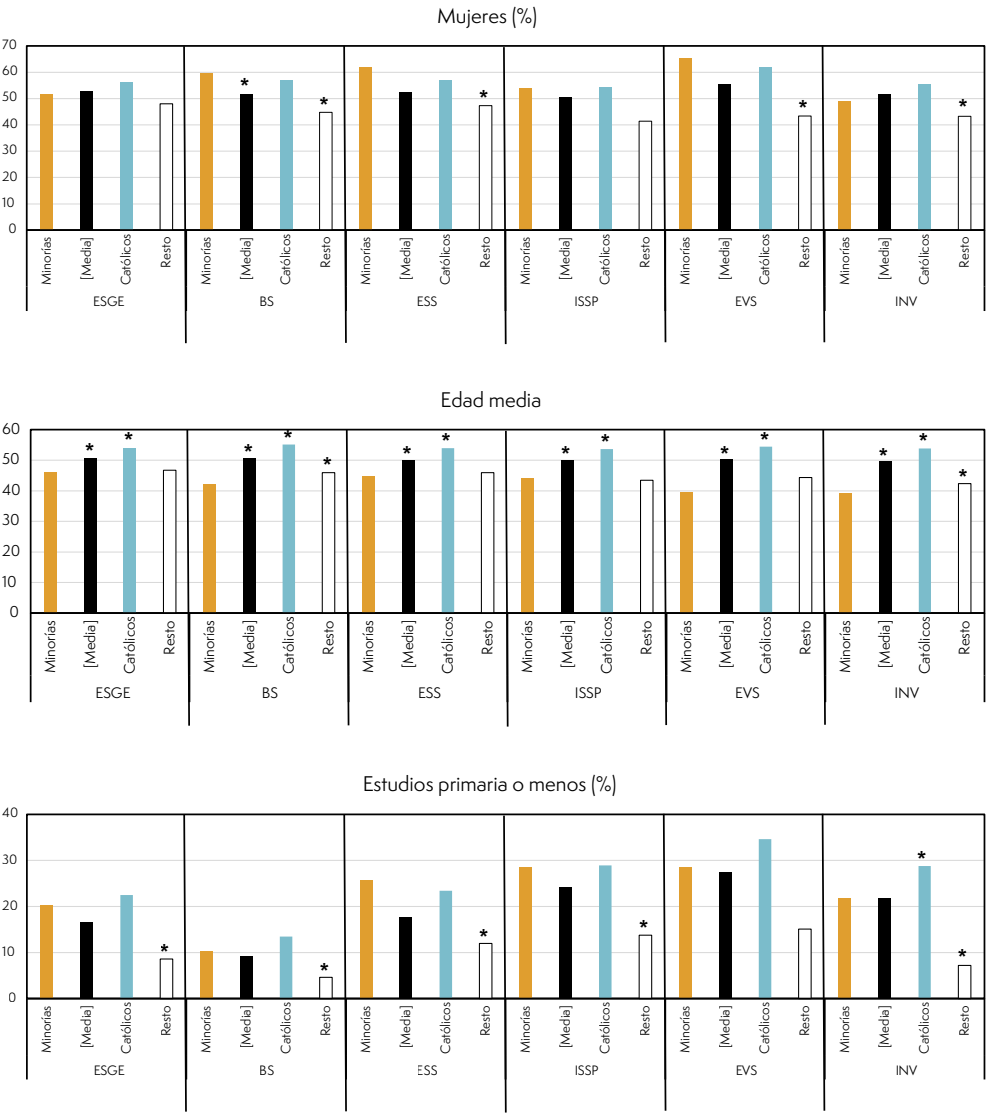
\*Excluding those born in Spain with at least one parent from Organisation of Islamic Cooperation (OIC) member countries.  
\*\*For the total population of Spain, the ESGE uses the Continuous Register as of 1 January 2022 as the reference; the EPA relies on the population estimated by the survey itself (weighted) for the respective quarter.  
Source: own research using the EPA library.

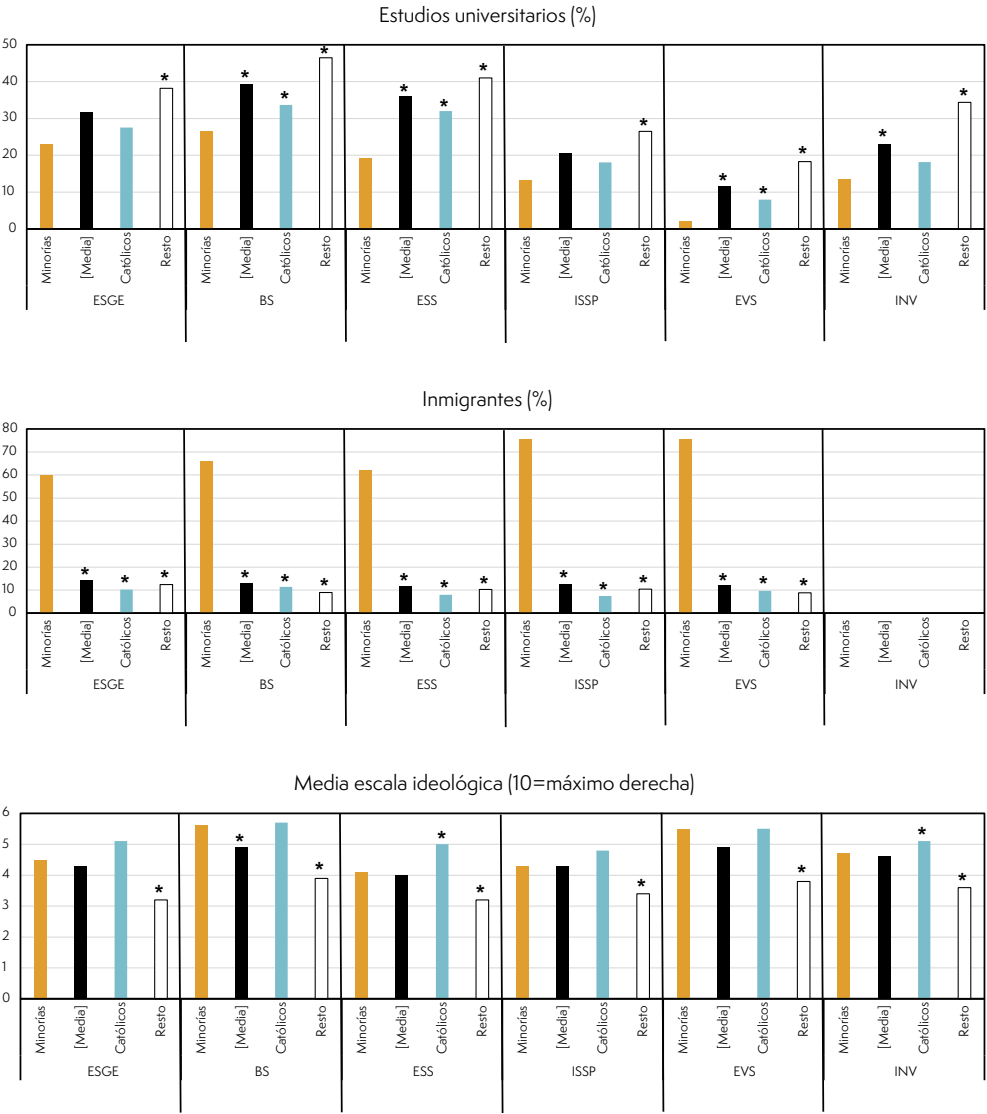
4.3. Profile of religious minorities: a comparative perspective

4.3.1. Socio-demographic characteristics

Analysing the socio-demographic characteristics of religious minorities presents challenges, primarily because the subsample size of these groups in surveys tends to be too small for precise estimates. Consequently, margins of error are often large, resulting in wide confidence intervals. However, by drawing on multiple studies, we can gain a general understanding of how religious minorities compare to Catholic believers and the rest of the population who do not identify as believers.

Graph 1  
Socio-demographic characteristics of religious minorities in Spain based on opinion surveys





Note: ESGE, ESS and ISSP use an ideological scale from 0 to 10; BS, EVS and INV use a scale from 1 to 10.  
(\*) An asterisk indicates statistically significant differences where confidence intervals do not overlap with those of minorities.  
Source: own elaboration based on the data sources.

Graph 1 displays differences among the three groups defined earlier, based on data from the six selected surveys. Since results vary for several reasons, we focus here only on differences within each survey rather than comparing results across surveys. The key point is to identify consistent patterns in the differences between groups.

Regarding gender, there is a slight tendency for women to be more represented among religious minorities than in the general population. However, this difference is only statistically significant in the BS. When compared to non-believers, significant gender differences appear in four of the six surveys, but there are no significant differences when compared to Catholics. Age differences are clearer. Religious minorities tend to be younger than both the general population and than Catholic believers in particular. They are also younger than non-believers, though this difference is statistically significant in only two surveys. This is because a large part of religious minorities are immigrants, who tend to be younger than Spaniards, who are predominantly Catholic.

It is worth noting that larger sample sizes would reduce confidence intervals, potentially making some of these differences statistically significant. Indeed, the two surveys with the largest samples (BS and INV) show the most statistically significant differences in Graph 1, in contrast to the EVS survey, which has the smallest sample.

Several educational differences can be observed in the data. Most notably, religious minorities tend to have lower levels of university education compared to non-believers and, in some cases, compared to Catholics as well. This trend is confirmed by all surveys. Differences at the lower end of the educational spectrum (primary education or less) are less pronounced but still exist. Non-believers show a clearly lower proportion of individuals with low education compared to religious minorities.

Graph 1 clearly shows that the main characteristic distinguishing religious minorities from the rest of the population is their place of origin. All surveys indicate that at least 60% of non-Catholic believers were born abroad, a figure much higher than that of the other groups and the national average, which is closer to 10%. Regarding the ideological scale, it appears that religious minorities place themselves further to the right than non-believers, possibly even more than Catholics.

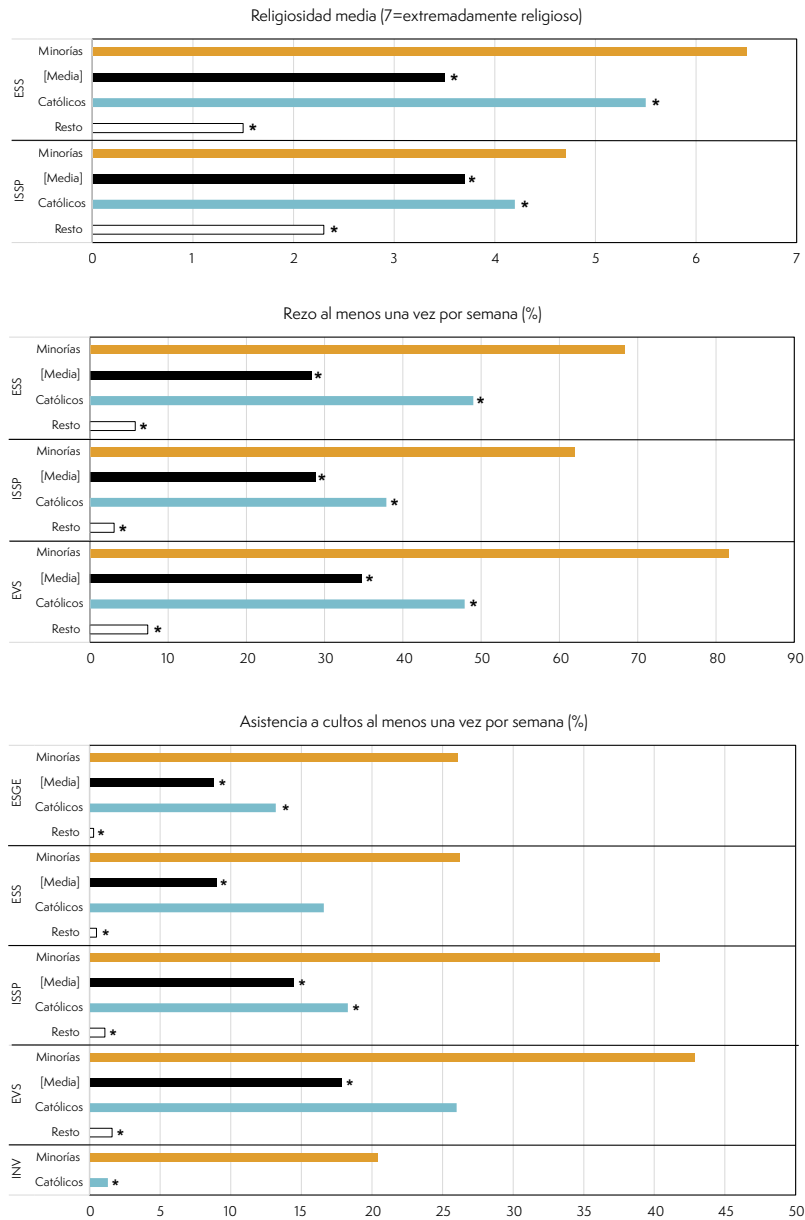
#### *4.3.2. Religious beliefs and practices*

A fundamental question regarding religious minorities is the extent to which these individuals hold stronger beliefs and engage in more frequent religious practices than other believers. Graph 2 offers evidence on this matter by examining three indicators: the degree of religiosity, the frequency of attendance at religious services and the frequency of prayer. The findings are striking: religious minorities express their beliefs more intensely than Catholics and, unsurprisingly, more than the rest of the population.

All three indicators point in the same direction. Religious minorities report a higher degree of religiosity than Catholic individuals, and they are also more likely to pray and attend religious services weekly. The differences between minorities and Catholic believers are particularly marked in terms of attending religious ceremonies.

As mentioned earlier, the socio-demographic profile of religious minorities in Spain differs in several respects from that of the Catholic population. It is possible that some of the observed differences in belief and practice may be partially explained by these socio-demographic factors. However, conducting multivariate analyses with such small subsamples presents problems of statistical significance and therefore does not allow for a clear understanding of the role of composition.

**Graph 2**  
*Religious beliefs and practices of religious minorities in Spain based on opinion surveys*



Note: the ESS records religiosity on a scale from 0 to 7; the ISSP uses a scale from 1 to 7.  
(\*) An asterisk indicates statistically significant differences where confidence intervals do not overlap with those of minorities.  
Source: own elaboration based on the data sources.

## 5. Conclusions

To study religious minorities in Spain, this article has drawn on six recent opinion surveys that include information on respondents' religious affiliation. Findings show that the estimates provided by these sources differ considerably from each other and, more importantly, tend to significantly underrepresent those who follow a religion other than Catholicism. Analysis of the Labour Force Survey (EPA) suggests that opinion surveys may be underestimating this group by as much as half. According to the EPA, by the end of 2024, there would be 6.1 million people in Spain belonging to a religious minority, 2.6 million of whom would be Muslim.

The analysis of the six opinion surveys offers a general view of the basic characteristics of religious minorities in comparison with the rest of the population. This group stands out above all for its significantly higher share of immigrants than the national average. They also tend to be younger, possibly more female and show a lower average level of education, particularly due to a lower proportion of university-educated individuals. In terms of ideology, they are more conservative than the average population, possibly even more so than Catholics.

This study is not without its limitations. The most significant is the lack of reliable data on religiosity, not only in Spain but globally. In the absence of censuses that record individuals' religious affiliation, national statistics are usually indicative and rely on surveys, which are not always harmonised and can yield differing estimates. This is especially relevant in our study, as our analytical strategy for estimating religious minorities in Spain is based partly on the religious composition of other countries.

In the EPA estimate, two assumptions were made that should be reconsidered in future research. First, that the religious profile of migrants mirrors that of those who remain in the country of origin. Second, that intergenerational religious transmission is most pronounced among Muslims. Although there are grounds to support both assumptions, the reality is undoubtedly more complex and deserves further nuance.

Finally, this study has treated religious minorities as a single, heterogeneous group. It would be a mistake, however, to overlook the diversity that exists within this category, which comprises a wide range of religious traditions that may vary greatly in both socio-demographic profile and religious practice. The main reason for not analysing each group separately is the nature of the data: the small sample sizes of the surveys do not allow for disaggregated analysis.

Despite these limitations, the findings of this research are valuable for several reasons. They help illuminate a phenomenon that remains largely invisible in official statistics. Before religious minorities in Spain can be studied using data, the size of the group must first be quantified. This preliminary examination of socio-demographic characteristics provides a necessary foundation for constructing more comprehensive samples capable of capturing the complexity of religious minorities in Spain.

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## Jacobo Muñoz Comet

A Doctor in Sociology with a European mention from the Complutense University of Madrid (UCM), with additional degrees in sociology (UNED) and journalism (UCM), he has served as a visiting researcher at Vrije Universiteit Amsterdam (VU), the University of Mannheim, Oxford University and the University of Amsterdam (UvA). He has published research on immigration, social inequality and labour markets in international journals including *European Sociological Review*, *Work, Employment and Society*, *International Migration Review* and the *Journal of Ethnic and Migration Studies*.

## Juan Ignacio Martínez Pastor

He holds a PhD in Sociology from the Complutense University of Madrid (UCM). He has held various academic leadership roles, including director of the Research Department at the Centre for Sociological Research (CIS) and vice-dean of research at UNED's Faculty of Political Science and Sociology. His research focuses on the labour market, social stratification, marriage, divorce, erotic capital and the interpretation and dissemination of social statistics, and his work has been published in international journals such as *European Sociological Review*, *Demographic Research*, the *International Journal of Comparative Sociology* and the *Journal of Ethnic and Migration Studies*.

## Notes

- 1 Survey 3194.
- 2 CIS Surveys 2752 and 2759.
- 3 The monthly CIS barometers were excluded from the selection of surveys because they target only Spanish nationals, thereby excluding all foreigners, many of whom belong to religious minorities.
- 4 Each edition of the ESGE focuses on a specific theme; in 2023, it was the environment.
- 5 The percentages estimated in each survey were calculated using the available weighting factors.
- 6 According to the Continuous Register compiled by the INE, 38,422,217 people of legal age resided in Spain in 2018.
- 7 According to the Continuous Register compiled by the INE, 39,389,072 people of legal age resided in Spain on 1 January 2022.

**ARTICLES/ARTÍCULOS**

# Democratic Principles in the Thought of Blas Infante

Principios democráticos en el pensamiento de Blas Infante

**Eva Cataño-García**

Andalusian Studies Centre (Centro de Estudios Andaluces), Spain  
[eva.catano@fundacioncentra.es](mailto:eva.catano@fundacioncentra.es)

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## ABSTRACT

The Andalusianist leader Blas Infante used the weekly *El Regionalista* between 1918 and 1919 to articulate and disseminate democratic principles. This study, based on a qualitative analysis of 28 articles authored by Infante, employs documentary and discourse analysis techniques, supported by NVivo software, which enabled the coding of key categories such as social justice, citizen participation and Andalusian autonomy. The findings demonstrate how Infante advanced a model of democracy that transcends the political sphere, incorporating proposals for agrarian reform, decentralisation of power and civic mobilisation. His critiques of centralism and his emphasis on historical consciousness reveal a conception of democracy as a transformative tool for building a more just and autonomous Andalusia. This approach, deeply rooted in Andalusian cultural identity, engages with contemporary debates on social justice and the significance of democratic values in regional contexts.

**KEYWORDS:** Blas Infante; Andalusianism; democracy; political thought; Andalusian regionalism; Andalusia; Andalusian nationalism.

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## RESUMEN

El líder andalucista Blas Infante utilizó el semanario *El Regionalista* entre 1918 y 1919 para articular y difundir principios democráticos. Este estudio, basado en el análisis cualitativo de 28 artículos escritos por él, implementa técnicas de análisis documental y discursivo con el apoyo del *software* NVivo, que permitió codificar categorías clave como justicia social, participación ciudadana y autonomía andaluza. Los resultados evidencian cómo Infante promovió un modelo democrático que trasciende lo político, integrando propuestas de reforma agraria, descentralización del poder y movilización ciudadana. Sus críticas al centralismo y su énfasis en la conciencia histórica revelan una concepción de la democracia como herramienta transformadora para construir una Andalucía más justa y autónoma. Este enfoque, profundamente arraigado en la identidad cultural andaluza, conecta con debates contemporáneos sobre justicia social y la relevancia de los valores democráticos en contextos regionales.

**PALABRAS CLAVE:** Blas Infante; andalucismo; democracia; pensamiento político; regionalismo andaluz; Andalucía; nacionalismo andaluz.

## 1. Introduction

The central hypothesis of this paper is that Blas Infante developed a distinctive vision of regionalist democracy that prioritised social justice, citizen participation and Andalusian autonomy in response to the centralisation of power in Spain. Discourse analysis reveals how he used *El Regionalista* not merely as a medium of communication but as a tool to shape interpretations and articulate demands for democratisation in Andalusia. This process underscores the dynamic interaction between writers and readers – an exchange deeply influenced by the socio-economic and linguistic formations of the period (Beetham, 1996, pp. 5–6).

*El Regionalista*, founded in December 1917, served as a key publication of the Centro Andaluz in Seville and a crucial platform for the dissemination of Andalusian regionalism. Although its existence was short-lived, the weekly established itself as a polyphonic space for dialogue, where political tensions were interwoven and the future of Andalusia was actively contemplated. The articles published covered topics such as the protection of cork oak forests, the creation of markets to ensure food supply, the fight against *caciquismo* and the promotion of Andalusian autonomy. These writings not only document the concerns of Andalusian regionalists between 1917 and 1920, but also legitimise a narrative of social justice and citizen participation that lies at the heart of the Andalusian leader's political thought – a response to the demands of his time during a period marked by political and social unrest in Spain.

By chronicling the political and social debates of the era – from the First World War to the Bolshevik Triennium – *El Regionalista*, like other similar publications, became a key instrument for promoting the exchange of ideas and encouraging public accountability, thereby enriching the political and democratic fabric of society (Bürki and Partzsch, 2016, p. 2).

Infante's conception of democracy goes beyond its literal meaning ("power of the people") and embraces a social and participatory dimension that advocates equity and justice. In this sense, his ideas may be linked to those of Jane Addams (1899), who criticised militarism and championed a participatory and peaceful model of democracy, and to those of Hans Kelsen (1988), who emphasised the necessity of a legal framework to guarantee equitable participation in government. Although no specific study has been conducted on the ideological influences or contemporary thinkers who may have shaped Blas Infante's thought, his views on democracy reveal an affinity with approaches that advocate a model extending beyond formal institutions.

## 2. Methodology

To understand the concept of democracy within the framework of Infante's Andalusianist project, an exhaustive documentary analysis of both primary and secondary sources was conducted, complemented by advanced techniques of critical discourse analysis.

The primary sources examined include key works by the Andalusian thinker, such as *Ideal Andaluz* (1915), *La verdad sobre el complot de Tablada y el Estado Libre de Andalucía* (1931) and *Andalucía desconocida* (1934), selected for their relevance to the development of democratic ideas. Additionally, 28 articles published in *El Regionalista* between 1918 and 1919 were analysed, sourced from the Pascual Carrión archive in Sax (Alicante), offering a fresh perspective on Andalusian regionalism at a pivotal stage in its evolution.

Secondary sources have also been essential for contextualising and enriching the theoretical framework. Noteworthy among these are the successive contributions to the seventeen *Congresos sobre el Andalusismo Histórico* conferences (1983–2024), promoted by the Blas Infante Foundation, as well as the work of key scholars analysing Infante's intellectual legacy. Juan Antonio Lacomba, for example, has produced foundational studies on the origins of Andalusian regionalism and its connection with nationalist movements in Spain. Works such as *Teoría y Praxis del Andalusismo* (1988), *Regionalismo y Autonomía en la Andalucía Contemporánea (1835–1936)* (1988) and *Blas Infante y el despliegue del andalusismo* (2000) are essential references for understanding the historical development of regionalism in Spain.

Francisco Acosta (1987) examines how federalism and Krausism influenced the ideology of the notary from the town of Casares in the province of Málaga, highlighting the relationship between these intellectual traditions and his proposal for auto-

my. Similarly, José Aumente, in his analysis of the *Manifiesto Andalucista de Córdoba* (1979), offers a valuable perspective on the ideological debates that shaped Andalusianism at the time. These works provide a deeper understanding of the ideological and cultural foundations underpinning the thought of the Andalusianist leader.

Contemporary scholars such as Isidoro Moreno (1981, 1983, 1986, 1993) have continued this line of research, emphasising the concepts of ethnicity and identity consciousness as mobilising forces in Andalusia. More recent studies by Salvador Cruz Artacho (2016), Eva Cataño García (2023), Manuel Clavero (2010) and Manuel Ruiz Romero (2008, 2010) offer new interpretations of the Andalusian intellectual's impact on the processes of regional autonomy and his ongoing relevance in contemporary political discourse.

The documentary analysis was structured in several phases:

1. *Data collection*: Identification of documents based on thematic criteria (democracy, culture, identity), chronological criteria (1915–1934) and academic relevance. Although a representative sample of texts was included, it is important to acknowledge that documentary analysis is inherently shaped by the availability of sources and their interpretation.
2. *Preliminary analysis*: Exploratory reading to identify initial thematic patterns.
3. *Coding*: Use of NVivo software (version Release 1.7.1) to categorise the sources into themes such as “participation”, “autonomy”, “historical and cultural consciousness”, “regional identity” and “social transformation”.
4. *Critical analysis*: Application of critical discourse analysis to examine how the concept of democracy is articulated within Infante's ideological project.
5. *Interpretation of results*: Synthesis of coded data to identify relationships and patterns among the categories.

This approach enables a comprehensive understanding of Infante's thought, linking his ideas to the historical and cultural context of his time. It also provides a replicable methodology that could be applied to other authors or topics concerning political and cultural thought in Andalusia. The inclusion of digital tools such as NVivo enhances the precision of the analysis and supports a rigorous systematisation of findings.

The analysis structured Infante's conception of democracy around five key axes: a critique of the political and social system, calling for far-reaching reforms to address structural injustices; the promotion of social transformation and collective responsibility, with justice and equity as the pillars of genuine democracy; citizen mobilisation as the driving force of political change; the preservation of

historical and cultural consciousness as the foundation of a robust democracy; and the defence of regional identity and Andalusian autonomy. These pillars reflect his democratic model and highlight its significance in the history of Andalusian regionalism.

### 3. Criticism of the political and social system within the democratic model

Through his writings in *El Regionalista*, the Andalusianist leader presents a forceful critique of the political and social system prevailing in Spain at the time, positioning this critique as a core component of his democratic vision. His discourse does not constitute a superficial complaint; rather, it offers a deep and systemic diagnosis of the structural failings which, in his view, undermine the legitimacy and effectiveness of government and perpetuate inequality and social injustice.

Infante identifies widespread disillusionment with the Spanish political system, rooted in its inability to take effective action or deliver tangible benefits for the people. In his view, government measures are not only ineffective but also serve to reproduce a cycle of structural injustice and inequality. In his texts, he consistently emphasises the need to dismantle centralism, which he sees as one of the primary obstacles to genuine democracy. This centralism, in his analysis, concentrates power in the hands of an elite, silences regional and local voices, and obstructs any meaningful and effective citizen participation.

The critique offered by the Father of the Andalusian Nation goes beyond denunciation, proposing deep reform to address the root causes of Spain's structural injustices. The notary from Casares identifies land concentration as one of the principal causes of poverty and inequality in Andalusia, arguing that its redistribution is essential not only for achieving social justice but also for consolidating an authentic democratic system. He accuses the government of protecting economic and political monopolies, allowing them to impose inflated prices on essential goods, export food during times of scarcity and neglect both the protection of farmers and the development of new industries. This conduct, according to the Andalusianist intellectual, reveals a clear disregard for the interests of the people and underscores the urgency of reform that prioritises the common good over private profit.

Infante not only criticises the actions of the government, but also its failure to address the underlying causes of social protests and strikes in a meaningful way. He argues that, rather than repressing demonstrators, the government should focus on identifying and holding accountable those truly responsible for the injustices that provoke such actions. This perspective reflects the conviction of the Father of the Andalusian Nation that genuine democracy must be rooted in justice and in a government that truly represents the interests of the people (Infante, 1918j).

Infante refers to the year 1898 – a pivotal moment in Spanish history marked by defeat in the war against the United States and the loss of its last colonies – to illustrate the profound national humiliation which, in his view, affected not only the generation of the time but also future generations (Infante, 1918a). He criticises the political and military leadership responsible for this outcome, attributing it to the corruption and inefficiency of the Spanish political system. By invoking this historical episode, he emphasises that the memory of defeat should serve as a warning to avoid repeating the same mistakes, highlighting the need for critical reflection on history as a basis for political and social renewal.

Infante underscores how the functions of government have been corrupted by the “rapacity” of political parties and their clientèle, who have turned these functions into instruments for personal gain rather than tools for promoting the common good. This critique exposes the lack of integrity and the abuse of power within government structures, stressing the urgent need for deep reform of the political system. He advocates the establishment of an authentic democracy, free from corruption and genuinely committed to the public good, proposing that such a transformation is not only a political imperative but also an act of justice and an affirmation of human dignity.

The task of caring for the Fatherland was regarded by Spaniards, whether in power or subordinate (the latter corrupted and degraded by the wickedness and example of the former), as a function of natural rapacity, in which the governing parties and their wretched clientèle alternated, pieces of a fatal mechanism designed to drain the nation’s lifeblood (Infante, 1918a, [translation]).

Ultimately, widespread discontent with the parliamentary system and the delegitimisation of existing institutions reveal the urgency of a democratic transformation capable of addressing the demands and aspirations of the people. For Infante, this transformation is not only a political necessity but also an act of justice and a reaffirmation of human dignity.

The Andalusianist leader denounces the government’s inaction and failure to produce concrete results in addressing Spain’s social and economic problems. He criticises the lack of positive outcomes from political debates, arguing that discussions of social and patriotic issues are used as a pretext for political posturing, rather than as genuine efforts to address underlying problems and seek effective solutions (Infante, 1918j).

His democratic proposals are grounded in a sharp critique of the ineffectiveness of Spain’s institutions, questioning both their structure and their functioning. Through pointed quotations, the Andalusianist intellectual lays bare the failings of the prevailing political system and underscores its inability to represent and serve the Spanish people effectively.

For Infante, Parliament symbolises the loss of legitimacy of existing institutions. He depicts it as a space in which personal passions prevail and political



debate becomes spectacle, diverting attention from the nation's most pressing concerns. He condemns Parliament's inertia and inefficacy in tackling social and political challenges, viewing it as an instrument of the oligarchy, incapable of enforcing the Constitution or defending the public interest. This absence of legitimacy and effectiveness leads him to question the usefulness of Parliament itself, pointing to the need for more effective alternatives for political representation and decision-making.

Infante suggests that the concepts of "revolution" and "democracy" have been emptied of meaning through superficial use, lacking genuine backing in concrete actions and proposals. He calls on the Spanish left to undertake a thorough study of the country's social problems and needs, emphasising the importance of an approach grounded in rational and in-depth analysis of social and economic realities. This focus on tangible action reflects his conviction that words must be accompanied by practical solutions capable of immediate implementation. He further warns that, without offering real solutions, the left risks losing the confidence of both the elite and the politically conscious public, thereby squandering valuable opportunities to advance the revolutionary cause (Infante, 1918q).

#### 4. Social and political transformation and responsibility

In the democratic principles outlined by Casares-born notary, the social and political transformation of Andalusia – along with the responsibility it entails – is central to the construction of a just society. He conceives of legislation and the enforcement of laws not merely as instruments of order, but as essential pillars for ensuring justice and promoting the common good. In his thought, the transformation of Andalusia is a necessary process that must be accompanied by a firm commitment to social responsibility, both individual and collective.

A key example of this perspective appears in the actions of the Centro Andaluz, which Infante highlights in one of his articles, where it demands the enforcement of laws relating to the celebration of Arbor Day (Fiesta del Árbol) in all Andalusian municipalities. This initiative is far from merely symbolic; it seeks to protect vital natural resources such as cork oak forests, while also fostering community well-being and ensuring a sustainable future for the region. For the Andalusianist leader, such actions underscore the importance of legislation that is not only enacted but also effectively enforced as a means to achieve genuine and lasting social justice (Infante, 1918e).

Infante's critique of the government's neglect of Andalusia's real challenges is evident in his rejection of simplistic and repressive responses that focus on a supposed "terrorist threat" in the Andalusian countryside. In his view, a true democracy must be capable of confronting and resolving the fundamental problems facing society,

rather than evading or manipulating them to justify ineffective policies. Infante advocates the drafting of a legislative bill to address the agrarian question in Andalusia, thereby affirming his commitment to social and political transformation through legislative action. He argues that, instead of responding with fear – as the central government does – Andalusia should engage in serious research and analysis in order to offer practical and just solutions for both the peasantry and the state (Infante, 1919e).

The issue of land is a recurring theme in Infante's reflections, where he proposes concrete measures such as penalising those who leave their land uncultivated and expropriating such land for redistribution among the population. This proposal reflects his strong belief in the democratisation of resources and in the importance of transparency and accountability in the management of public assets. For Infante, land redistribution is a vital step towards more equitable socio-economic development, allowing all citizens to participate fully in the economic and political life of the region.

Beyond the borders of Andalusia, this pioneer of regionalism broadens his vision of political transformation to encompass both the national and international spheres. His position includes a clear focus on issues such as disarmament and international security, cooperation among nations and democratic governance at the global level. Infante criticises the superficial disarmament proposals put forward by the League of Nations, arguing that only absolute and universal disarmament could genuinely promote peace and justice on a global scale. For him, any other form of disarmament is incompatible with the principles of a truly democratic international order.

Wilson speaks, in his fourth point, of 'the reduction of armaments'. We understand this to mean both a nation with reduced armaments and a nation that remains armed. And this is an inconsistency on Wilson's part, incompatible with his earlier principles (Infante, 1918r, [translation]).

Regarding governance, he suggests that responsibility for disarmament should rest with a representative international body, whose decisions are made transparently and justly. This idea reflects his deep conviction that democratic governance must extend beyond national borders and that decisions affecting the security and well-being of people must be taken inclusively and equitably. In a genuine democracy, international institutions should operate with the same transparency and accountability expected of national governments.

Another crucial element of his proposal is his rejection of demagoguery and oligarchy, and his defence of a form of government based on what he terms "natural aristocracy". For the Andalusianist leader, true aristocracy is not defined by social status or inherited privilege, but by excellence in thought, feeling and action. This "natural aristocracy", in his view, represents the embodiment of a disciplined and effective

democracy, in which popular government is exercised by those most capable and most committed to the common good. Infante maintains that this ideal form of political organisation can only be realised within the framework of a republic, as monarchy perpetuates a system of privileges fundamentally at odds with the principles of a meritocratic democracy.

I believe in only one royalty. The only majesty I respect is the majesty of a natural royalty – the royalty of those superior in thought, in feeling, and in the energy and fruitfulness of action. The commanding individuals, best equipped to govern and lead the advancement of the people. These are the true kings: those who exercise their reign through the collective conscience (Infante, 1918i, [translation]).

In his view, the idea of “renewal” does not refer to superficial changes in personnel or discourse, but to a profound transformation of the institutions and social structures underpinning society. He argues that many existing bodies are obsolete and ineffective in meeting the needs of the Andalusian people, and must therefore be replaced or reformed to serve their true purpose: to promote the common good and uphold social justice (Infante, 1919h).

In summary, Infante’s thought on responsibility and political and political transformation in Andalusia is deeply rooted in his commitment to justice, freedom and equality. His vision appeals to reason and consensus, proposing concrete measures to improve the socio-economic conditions of the region, always with a strong emphasis on awakening regionalist consciousness and advocating for the freedom and dignity of all Andalusians. Transformation, in his view, is a comprehensive process requiring not only legislative change but also a profound renewal of social and political structures, with the aim of building a fairer, more equitable and democratic Andalusia.

## 5. Citizen mobilisation and participation

In his proposal, conscious and active participation is essential for the functioning of a genuine democracy, in which the individual is the central actor. He stresses that an effective democracy requires the direct involvement of citizens in decision-making and in building the common good, viewing this participation not only as a right but as a responsibility intrinsic to the exercise of popular sovereignty.

According to Infante, citizen mobilisation in Andalusia depends on personal variables such as individual interest, access to information and a sense of political efficacy, as well as collective variables like the existence of organisational networks and community stability. These factors are interwoven to form the foundation of an active and committed citizenry. Infante questions whether a stable community exists in Andalusia, whether Andalusians are integrated into networks that foster participation, and whether there are parties or movements capable of effectively mobilising

the most disadvantaged sectors. These reflections suggest that class or status consciousness may be key to mobilisation, in line with Pizzorno's argument that "class consciousness promotes political participation, and in its turn political participation increases class consciousness" (1975, p. 49).

For the Andalusian thinker, local commitment is crucial for generating authenticity and a rooted connection with Andalusia, which in turn lends legitimacy and strength to the regionalist movement. Infante highlights the importance of balancing representation and participation in a genuine democracy, where citizens do not merely delegate power but are actively involved in decision-making. This idea resonates with Bernard Manin (1998), who argues that a fully realised democracy requires not only representation but also the direct participation of citizens. This commitment is embodied in the altruistic actions of the Centro Andaluz, which the notary from Casares describes as a work of "conscious and serious redemption", aimed at establishing a democratic and representative form of regionalism (Infante, 1918c).

Infante harshly criticises passivity and resignation in the face of injustice, accusing those who consider themselves neutral of apathy and small-mindedness for failing to engage in political life and limiting themselves to fulfilling their individual responsibilities without regard for the common good. He underscores the importance of every person assuming their responsibility as a citizen and contributing actively to collective well-being (Infante, 1918k). This critique is amplified in his proposal to organise an assembly on the Guadalquivir River navigation project, where he stresses the need to become involved in initiatives that directly benefit Andalusian territory (Infante, 1918l).

Andalusian regionalism has raised in the city the banner of rebellion, and the wind now carries its vindicating anger – purifying love – through the mountains and valleys. Our clarion call will echo in the hollows of every rock. Many voices already join its call, whether heard or not by the deaf of spirit. It will cry out desperately to the rough shepherds of the sierras, to form armies with the famished peasants of the plains (Infante, 1918d, [translation]).

The Father of the Andalusian Nation also emphasises the importance of committed and responsible participation in public affairs, asserting that democracy is a system in which sovereignty resides with the people and is exercised through their direct involvement in decision-making. In his discourse, he poses the dilemma of "free land or revolution", arguing that the only path to freedom and justice is through collective mobilisation and direct action (Infante, 1918f). This call to action is not simply an exhortation to protest, but an invitation to a profound transformation of the political and social structure of Andalusia – one that can only be achieved through the sustained and collective effort of those who uphold the democratic ideal.

A staunch critic of civic passivity and social conformity, Infante incites rebellion grounded in the struggle for life and liberty as the driving forces of change and progress. He particularly stresses the need for this committed and persistent activism

to overthrow the *caciques* and establish a political system based on democracy and citizen participation. According to him, only through the continuous, united effort of those who defend the democratic ideal can meaningful change be brought about in Andalusia's political and social structure.

The *cacique* exists for the weeping multitudes who do not revolt against the lashes they receive. The *cacique* is created by that amorphous, unconscious crowd. To bring down the *cacique*, we need a wandering apostleship of the ideal (Infante, 1918m, [translation]).

His criticism of those who remain passive and conformist underscores the importance of active citizenship in a democracy. Democracy requires civic engagement and a constant drive to improve society.

Repugnant old men, bitter and selfish, trapped in young bodies: despicable asexuals; neutral in thought and action; vile prostitutes of conscience and faith – you who form the youth of this era, whom virile Andalusia endures, ashamed, on our behalf... Andalusia and Spain cannot be renewed because the young are old, and the old young men are dying... [...] For every lip that is silenced, a hundred lips open to free from the chest the eternal voice that commands life and its perfection – for individuals, for peoples and for worlds (Infante, 1918p, [translation]).

For the notary from Casares, democracy entails not only the election of leaders, but also active and ongoing participation in policymaking and decision-making processes that affect the community. This is made evident in his *Manifiesto de los Regionalistas* of January 1919, where he calls on all social classes, including workers, to unite in the struggle for Andalusia's autonomy and freedom. This manifesto reflects his vision of a participatory democracy, in which citizen engagement is essential to the democratic process and to the attainment of a fairer society (Infante, 1919c).

The youth also plays a central role in his proposal. The Andalusianist leader appeals to young Andalusians to serve as the vanguard of the struggle for renewal and change. He underscores the importance of young people uniting and committing to the regionalist cause – not only as a means of challenging the *status quo*, but also as a way to safeguard Andalusia's future in the hands of those willing to fight for its dignity and freedom (Infante, 1919d).

Despite opposition and attempts to discredit him, the Andalusianist leader demonstrates a remarkable ability to adapt strategically to changing circumstances, maintaining both his leadership and his unwavering commitment to the regionalist cause. As he himself notes:

Despite the manoeuvres carried out by the *caciques*, who sought to incite the disruptive elements against me, common sense has prevailed. The sensible opinion of each town has understood that the *caciques* see in the new candidate an irreconcilable enemy (Infante, 1919g, [translation]).

Following the Regionalist Assembly in Córdoba in 1919, the notary from Casares initially announced his withdrawal in order to resume his studies. However, he later reconsidered this decision, arguing that it would be more prudent to wait until the general situation had become clearer before reaching a definitive conclusion (Infante, 1919f). This change of stance reflects both his steadfast commitment to the regionalist cause and his capacity to respond strategically to unfolding events. His return to leadership not only reinforced his central role as a political figure, but also revealed the fragility of the movement's structures, within which his presence proved vital to maintaining cohesion and directing collective efforts towards democratic objectives.

Moreover, the notary calls for popular mobilisation as a form of peaceful resistance in the face of oppression and arbitrary authority. He underscores the importance of community solidarity and unity in the struggle for fundamental rights (Infante, 1919i).

In conclusion, for the Father of the Andalusian Nation, citizen mobilisation and participation are the foundations upon which a true democracy must be built. Infante regards popular mobilisation not merely as a means to achieve political transformation, but as an end in itself – where citizen engagement becomes the very essence of a living and effective democracy.

## 6. Historical and cultural consciousness

In Infante's democratic vision, historical and cultural consciousness is not merely an abstract notion but a critical tool for reconstructing collective identity and driving political transformation in Andalusia. Infante does not simply acknowledge the importance of history and culture; rather, he places them at the heart of his efforts to challenge hegemonic narratives and articulate an emancipatory project for his people. The pluralism of values and the moral irrationality present in his thought reflect his concern with the tensions between competing conceptions of the good within a democratic society.

In this sense, Infante stresses the need to investigate and recover the forgotten history of Andalusia – not only to recover the key milestones and figures of its past, but also to reclaim the region's collective memory and restore its lost identity (Infante, 1918c).

He starts from the premise that official history, written by the victors, has marginalised and distorted the true history of Andalusia, stripping the Andalusian people of their dignity and obscuring their legacy of civilisation and peace. In his writings, he offers a sharp critique of how dominant forces have instrumentalised history to reinforce inaction and subjugation, describing how Andalusians have been ridiculed and despised, reduced to the figure of a “loafer” in the eyes of Spain and the wider world (Infante, 1918f). In his view, this manipulation of cultural identity is not mere-

ly an act of oppression but a deliberate strategy to retain control over a region rich in resources and human potential.

Accordingly, he advocates not only for a “recovery” of Andalusian history, but insists on the need for a critical “rescue” of its collective memory. This act of rescue is not simply about remembering the past – it involves unearthing and reclaiming those aspects of history that have been systematically silenced or distorted. His critique of Spain’s belligerent and centralist historiography is particularly relevant in this regard. By contrasting it with the rich cultural and civilisational heritage of Andalusia, he challenges the very foundations of official history and proposes a new reading that foregrounds the values of peace, culture and creativity which he associates with the *genio andaluz* (Infante, 1918h). He calls on all Andalusians to remember their history and to contribute to the construction of a future rooted in the aspiration to live a distinct and dignified life, underpinned by freedom and justice (Infante, 1919b).

Infante also develops a critical theory concerning the relationship between history, culture and power. He recognises that history is not a neutral sequence of events but an ideological construct that reflects the dynamics of power in society. From this perspective, history becomes a contested space in which the struggle for cultural hegemony takes place. Infante draws on this critical understanding to emphasise the importance of Andalusians not only remembering their past, but also reinterpreting it and using it as a foundation upon which to build a more just future. For him, this process of historical reinterpretation constitutes an act of resistance against cultural and political domination.

Within Infante’s critique, cultural consciousness emerges as a process of awakening that involves both reflection on the past and commitment to the present and future. He describes this process as the awakening of the *genio andaluz*, which entails recognising and valuing the unique traits of Andalusian culture – its creativity, ingenuity and communal spirit. This awakening is seen as a prerequisite for any process of social transformation, as it equips the community with the symbolic resources necessary to resist oppression and forge its own path towards freedom and justice.

In his critique of *caciquismo* and the authoritarianism that has shaped Spain’s recent history, the Andalusianist leader underscores the importance of a well-informed collective consciousness as the foundation of genuine democracy. He argues that the manipulation of history and culture by the elites has obstructed the development of a critical and active citizenry, thereby enabling the persistence of unjust power structures. Infante laments that many Spaniards are more prepared to become *caciques* than democrats – a criticism that reflects his conviction that without a critical understanding of history and culture, democracy remains shallow and vulnerable to manipulation by the powerful (Infante, 1918i).

His proposal for a new Spain, built from the “homes of the people”, emphasises the importance of civic engagement at the local and regional levels in the construction of authentic democracy. This decentralised political vision reflects his critique of the



Spanish state's centralist structure, which has long ignored and marginalised the cultural and historical specificities of its regions. Infante advocates a form of democracy that not only respects but celebrates cultural diversity, and that grants regions genuine control over their own affairs. This critical approach to political and cultural decentralisation is key to understanding Infante's conception of the relationship between power, culture and democracy (Infante, 1918t).

He also connects historical consciousness with political empowerment, arguing that a citizenry informed and aware of its history is essential to the defence of democracy. Civic education and political empowerment, according to the notary from Casares, are indispensable tools through which citizens become agents of change, capable of challenging oppression and building a more equitable society. In this context, collective consciousness becomes a mobilising force, enabling a people not only to remember their past but to use it as a resource for transforming their present reality (Infante, 1919b).

Finally, Infante's defence of Andalusia's regional identity involves a critical rejection of the homogenising narratives imposed by the central state. He sees Andalusian history and culture as a source of resistance against oppression and a foundation for emancipation and self-determination.

It was the soul of Andalusia – wounded, drained of life, tormented in its towns and villages by the political regime imposed upon it by the spirit of foreign powers (*caciquismo* being the heir of feudalism, and Andalusia, throughout its history, having never known a feudal regime); it was Andalusia – hungry and faltering, its bare fields overgrown with scrub, imprisoned by feudal barbarism – that cried out in two voices: Freedom for my people! Freedom for my land! (Infante, 1918s, [translation]).

This approach underscores the importance of recognising and valuing the cultural and historical particularities of each region as a way of enriching cultural diversity within a state that respects the autonomy and participation of its peoples (Infante, 1918t).

The author of *Ideal Andaluz* declares that Andalusia constitutes a nationality by virtue of a “common need” that calls upon its inhabitants to fight for their collective emancipation. He emphasises that both nature and history have endowed Andalusia with a distinctive character – within the Iberian Peninsula and beyond (Infante, 1919b). This thesis highlights the singularity and differentiated identity of Andalusia as an entity with unique characteristics, both within Spain and in the international arena.

In conclusion, historical and cultural consciousness in Infante's thought not only redefines the identity of Andalusia, but also provides a critical foundation for its social and political regeneration. He invokes history and culture not merely as a legacy to be preserved, but as a source of inspiration and as critical tools for challenging



oppressive power structures. His approach underscores the importance of a critical rereading of history as an act of resistance and as a means of building a freer, fairer and more democratic Andalusia.

## 7. Andalusian regional identity and autonomy

The analysis of Andalusian regional identity and autonomy in Infante's thought reveals a sophisticated and multifaceted understanding of how cultural identity becomes a central axis for political and social transformation. Infante conceives of Andalusian identity not merely as a cultural assertion, but as a vital political force for the emancipation of Andalusia. This approach is relevant for understanding how tensions between centre and periphery – described by Rokkan (1982) as *social cleavages* – manifest in the struggle for regional autonomy.

Infante presents Andalusia not only as a geographical entity, but as a living reality shaped by a shared history, a rich cultural heritage and a collective project for the future (Infante, 1918h). Such a vision is essential for the construction of a regional identity that does not dwell in nostalgia for a glorious past but looks ahead to the creation of a fairer and more autonomous future for all its people. In this regard, autonomy is not simply a political objective but an intrinsic necessity – one that enables Andalusians to define their own destiny, make decisions about their immediate reality and shape a development model aligned with their values and traditions. This perspective is firmly rooted in the democratic principles of citizen participation and the decentralisation of power, both of which are central to the Andalusianist leader's political vision.

The reaffirmation of Andalusian identity is interpreted as an act of resistance to historical domination and to the denial of Andalusia's distinctiveness within a plural Spain (Infante, 1919b). Infante mobilises regional identity not only as a tool for promoting social cohesion but also as a means of contesting the centralised power structures that have sought to homogenise the diverse identities coexisting within the Spanish state. This defence of Andalusian identity thus becomes a form of cultural resistance aimed at safeguarding and promoting diversity within the state, in defiance of the homogenising pressures imposed by central authority.

The personality of Andalusia, despite the denial imposed upon it by barbaric domination, now stands out more powerfully than that of any other Hispanic nationality (Infante, 1918s, [translation]).

According to Infante, the role of regionalists is crucial in advancing autonomy. Regionalists act as catalysts of the movement and as bearers of the doctrine and programme capable of addressing Spain's reform needs. Infante stresses that the regionalist organisation and programme are not merely responses to immediate

demands, but a framework of substance and action capable of effecting profound and lasting transformation. This transformation involves not only changes in public policy, but also a reconfiguration of power relations between centre and periphery (Infante, 1918q). Thus, Infante understood democracy as a space in which the tension between consensus and conflict is fundamental – particularly in the struggle for Andalusian autonomy. This vision aligns with Chantal Mouffe’s (2005) claim that “democratic politics must be seen as an agonistic space where adversaries recognise the legitimacy of each other’s demands”.

In his view, promoting regional autonomy serves to strengthen democracy. He emphasises that the awakening of patriotic feeling and regional identity is essential to empowering local communities. Such autonomy not only encourages citizen participation but also enables the emergence of a conscious people capable of self-government (Infante, 1918i). Infante argues that strengthening democracy in Spain depends largely on the recognition and valuation of regional identities, as well as on promoting political decentralisation processes that grant greater autonomy and participation to the regions.

In defending Andalusia’s regional identity, the Andalusianist leader echoes Isaiah Berlin’s concept of positive liberty, which emphasises self-determination and control over one’s own destiny. Infante rejects the homogenising narratives imposed by the central state, viewing Andalusian history and culture as a source of active resistance and a path to emancipation. According to Berlin (2004), true liberty is not merely the absence of external interference (negative liberty), but the ability of a community to self-determine and exercise control over its own future – precisely what Infante demands for Andalusia.

He also underscores the historical and cultural plurality of the regions as an inherent trait, not one granted by social authorities but manifested throughout history. This recognition of diversity within a state is fundamental to the democratic ethos that Infante advocates. By drawing a parallel between the situations of Catalonia and Andalusia, he reaffirms his conviction that a region’s personality can neither be contested nor granted – it is a natural and historical fact (Infante, 1918t). This vision challenges traditional conceptions of a centralised state, instead proposing a more plural and democratic model that respects and celebrates cultural diversity.

Infante’s vision of national identity and regional autonomy reveals a deep understanding of the complexity of the relationship between power and society. By challenging the traditional conception of Spain as a static entity, he invites reflection on the dynamic and constructive nature of national identity, which emerges from the shared experiences and narratives of its people. A striking aspect of his approach is the way he locates the heart of the true Spain in the free municipalities and in the solidarity among regions that are conscious of their history and personality. This decentralised and participatory vision not only promotes local

empowerment but also fosters a deeper sense of belonging and solidarity among communities.

Official Spain is a people lying disoriented across the vast expanse of the ancient homeland. The new Spain must be sought in those homes of the people that are the free Municipalities, in the free fellowship of peoples and regions aware of their history and their personality (Infante, 1918t, [translation]).

The Andalusian intellectual's defence of municipal freedom and autonomy is presented as a push towards a more direct and participatory democracy. His proposal for each municipality to maintain an intermediary establishment for consumer goods – such as municipal cooperatives – is a concrete example of how Infante envisions autonomy not merely as a political ideal, but as a set of practical measures to improve citizens' daily lives. These economic and social initiatives are integral to his vision of sustainable and equitable local development for Andalusia (Infante, 1919b).

Finally, the Andalusian leader's proposal for regionalist unity and peninsular solidarity reflects the importance he places on collaboration and cohesion among the various regions and regionalist movements in the pursuit of shared goals. He does not view Andalusian autonomy in isolation, but as part of a broader movement for regional empowerment across the Iberian Peninsula. This joint action is seen as an effective strategy for strengthening the position of the regions vis-à-vis the central state and for advancing their demands for self-government and political recognition (Infante, 1919c).

In conclusion, for Infante, Andalusia's regional identity and autonomy are more than political aims; they constitute the pillars of a broader project of cultural and social regeneration that challenges centralised power. His vision redefines the relationship between centre and periphery, placing cultural diversity and decentralisation at the core of a more inclusive and just democracy. From this perspective, his regionalism becomes a means of combating *caciquismo* and other forms of oppression that obstruct the democratic and equitable development of the region.

## 8. Conclusions. A model of democracy

The analysis of the Andalusianist vision of the notary from Casares reveals a conception of democracy that transcends the traditional political sphere, becoming a cultural and moral project deeply rooted in Andalusian identity. Throughout his career, he draws key distinctions – such as that formulated in the *Carta Andalusista* (1935) – between the “Brotherhood”, understood as a spiritual and enduring unity, and political parties, which he criticises as temporary and opportunistic. This contrast reflects his view that a genuine democracy cannot rely solely on political structures but must be nourished by a collective cultural consciousness that serves as the basis for cohesion and social transformation.

From his early writings, such as *Ideal Andaluz* (1915), to his more mature work, Infante delves into the relationship between democracy and regionalism, arguing that Andalusian autonomy is not only a political claim but also an act of cultural justice. This evolving conception leads him to reject mass politics in favour of a more personalised and community-based approach, in which individuals and local communities play a central role in the democratic process.

His critique of traditional political structures, evident in works such as *La verdad sobre el complot de Tablada* (1931), underscores his scepticism towards the centralist system and the oligarchies that perpetuate social injustice. He advocates for a model of democracy based on the active participation of all social sectors, distancing himself from elitist approaches that prioritise state control over local dynamics. In this regard, his democratic model is resilient and adaptive, integrating values such as social justice, equity and respect for cultural particularities.

#### *A multidimensional approach: culture, rationale and participation*

The discursive analysis of these representations is complex, as the concept contains “many layers of overlapping meanings throughout its history, all of which remain present in current debate” (Abellán, 2013, 2020). Infante’s perspective highlights the importance of a transformative democracy that incorporates both conceptual and practical elements. Through his body of work and in the 28 articles analysed from *El Regionalista*, the Andalusian intellectual articulates a discourse in which culture and democracy serve as tools of resistance to centralism and as a foundation for constructing a strong regional identity. This approach leads him to challenge the vices of traditional political parties and to propose a “decent politics” grounded in the genuine representation of the interests of the Andalusian people.

In his view, social justice and land redistribution are essential pillars of genuine democracy. He denounces the concentration of resources as a barrier to Andalusia’s development, linking this issue to the need for a structural transformation that liberates the region from the oppressive dynamics imposed by the centralist system. This aspect underscores his commitment to citizen mobilisation as a driving force for political and social change, highlighting the importance of an active and conscious citizenry.

#### *The contemporary relevance of Infante’s democratic model*

From an interdisciplinary perspective that combines history, sociological discourse analysis and political theory, Infante’s democratic model emerges as a relevant contribution to current challenges. His vision resonates with Max Weber’s theory of social action (1922), particularly in its emphasis on the interplay between reflection and praxis as defining features of his leadership. The notary from Casares not only puts forward a theoretical framework, but also complements it with practical strategies that address the issues of his time from an ethical and cultural standpoint.

Finally, Infante's democratic thought – deeply rooted in the values of Andalusian identity – offers valuable insights for contemporary debates on social justice, community cohesion and self-determination. His model, in which culture acts as a transformative axis, not only responds to the problems of the past but also offers tools for addressing the challenges of modernity, reaffirming the ongoing relevance of his legacy in today's political and cultural landscape.

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## Annex 1. Hemerographic resources

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## Eva Cataño-García

Eva Cataño García holds a PhD in Contemporary History from the University of Seville and was awarded the 2022 “Memorial Blas Infante” Research Prize. Her research focuses on contemporary history and social research in Andalusia, with particular emphasis on Andalusian regionalism and the role of the press in the construction of political identities. She is currently a researcher at the Centro de Estudios Andaluces and a tutor lecturer at the UNED.



ARTICLES/ARTÍCULOS

# Digital, Media and Parental Competence: A Bibliometric Analysis of Training in the Family

La competencia digital, mediática y parental:  
análisis bibliométrico sobre la formación en la familia

**Antonio González-Molina**

University of Córdoba, Spain  
agmolina@uco.es

**Rocío Gómez-Moreno**

University of Córdoba, Spain  
m32gomor@uco.es

**Lucía Ballesteros-Aguayo**

University of Málaga, Spain  
luciaballesteros@uma.es

**Antonia Ramírez-García** ✉

University of Córdoba, Spain  
a.ramirez@uco.es

**M<sup>a</sup> Pilar Gutiérrez-Arenas**

University of Córdoba, Spain  
pilar.gutierrez@uco.es

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## ABSTRACT

Families must navigate their relationship with a society heavily shaped by technology, in which children represent a particularly vulnerable group when parents lack adequate training. Accordingly, the primary objective of this study is to characterise the scientific literature on family training in parental, media and digital competences, using various bibliometric indicators to produce a visual map of the current state of the field. A bibliometric analysis was conducted, following the PRISMA protocol, covering the period from 2000 to 2022. The findings reveal an exponential increase in scholarly interest regarding the training provided to families in these three areas of competence, a growing volume of publications on the topic and the interdisciplinary nature of the research. Notably, research in Spain demonstrates a particularly high level of quality in this field. In conclusion, scientific evidence can contribute to identifying the most effective training approaches and the academic disciplines from which such training should be informed.

**KEYWORDS:** families; digital competence; media competence; parental competence; bibliometric review.

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## RESUMEN

Las familias han de afrontar competentemente su relación con una sociedad muy marcada por la tecnología en la que los menores constituyen un colectivo vulnerable si sus progenitores no se encuentran lo suficientemente formados. Por esto el principal objetivo es caracterizar mediante distintos indicadores bibliométricos la producción científica sobre la formación de las familias en competencias parentales, mediáticas y digitales, permitiendo elaborar un mapa visual del estado de la cuestión. Se ha llevado a cabo una investigación bibliométrica, siguiendo el protocolo PRISMA, en el periodo de análisis 2000–2022. Los resultados evidencian el incremento exponencial del interés científico sobre la formación que ha de ofrecerse a las familias en estas tres competencias, el creciente número de documentos que se publican sobre la misma y la interdisciplinariedad de la temática. Se ha mostrado que en España esta investigación goza de muy buena calidad. En conclusión, la ciencia puede ayudar a identificar la mejor formación posible y desde qué ámbitos de conocimiento enfocarla.

**PALABRAS CLAVE:** familias; competencia digital; competencia mediática; competencia parental; revisión bibliométrica.

## 1. Introduction

The family constitutes the first social context in which an individual participates. As such, Martínez-Vasallo (2015) defined it as the primary sphere of social organisation in the life of any minor. Similarly, Benítez (2017) noted that although the family is a universal institution, its development does not occur in isolation but is closely linked to wider society.

Positioning the family within the broader social framework, particularly in relation to internet use in Spain, the *Social Networks Study* (IAB Spain, 2024) reports that 94% of the Spanish population aged between 12 and 74 (approximately 35.5 million people) are internet users, and 86% are active on social media. According to the *Digital News Report Spain* (Amoedo, 2023), seven in ten internet users (67%) use their mobile phones to access information online. Furthermore, the use of smart TVs (30%) is approaching that of computers (33%) as a device for consuming news.

In a society so deeply influenced by technology, the importance of the parental role is particularly salient. As Rubio (2022) argues, being a parent today is increasingly complex due to the challenges posed by a media-saturated and digitised environment. In this context, the exercise of parental competences is inextricably linked to the media and digital competence of parents.

Regarding media competence, UNESCO recognises the essential role that information – and particularly the media – plays in the everyday lives of individuals. Media and information literacy (*MIL*) is defined as “the process of learning technical, cognitive, social, civic and ethical skills and abilities to analyse content more critically and develop an active stance towards it” (Cucarella and Fuster, 2022, p. 11).

MIL entails enabling “people’s ability to engage critically with information, navigate the online environment safely and responsibly and ensure there can be trust in our information ecosystem and in digital technologies” (UNESCO, n.d.).

Concern among political leaders, educators and parents has grown in relation to strategies for fostering media and information literacy in children.

Various studies (Chen *et al.*, 2020, Song, 2021) highlight how the presence of different digital devices in the home environment – such as televisions, tablets, computers and smartphones – can influence the family’s effectiveness in implementing media literacy practices. In this way, parents can either contribute to or hinder the development of media literacy in their children.

Digital competence refers to “the confident, critical and responsible use of, and engagement with, digital technologies for learning, at work, and for participation in society” (Council of Europe, 2018, p. 9). At present, national and international bodies are implementing public education policies aimed at enhancing digital competence and fostering digital citizenship (Paredes-Labra *et al.*, 2021).

At the international level, organisations such as the Joint Information Systems Committee (JISC) in the United Kingdom have undertaken pedagogical initiatives to promote digital literacy (McDougall *et al.*, 2018). Similarly, universities across the globe have developed frameworks to support the advancement of digital literacy (Walton, 2016). These developments underscore the significance of media and digital competences in the lives of minors – competences that must be nurtured not only through formal education, but also via non-formal and informal learning environments, particularly within the family unit.

## 2. Competence development in the family

### 2.1. Parental competences and positive parenting

The role of parenting is increasingly perceived as a complex and demanding task, presenting numerous challenges linked to the social, political and technological transformations that have taken place in recent decades. As a result, it is common for parents to experience uncertainty and frequently question how best to respond to various situations encountered in the upbringing of their children (Rubio, 2022). This complexity is further heightened by the growing need to train parents in media and digital competences.

Parental competence is defined by Barudy and Dantagnan (2010) as the “know-how” or practical skills that parents activate in caring for, educating and protecting their children to support their healthy development. Similarly, Gómez and Muñoz (2014) conceptualise it as the continuous acquisition and evolution of knowledge, skills and attitudes that guide parental behaviour in the context of family life and child-rearing. This includes responding to the diverse developmental needs of minors – physical, cognitive, communicative and socio-emotional – with the ultimate aim of ensuring their well-being and the full exercise of their human rights. These authors identify four core domains of parental competence: emotional bonding, educational guidance, protection and reflective capacity.

With regard to family policies, the Council of Europe (2006) issued the Recommendation of the Committee of Ministers to member states on policy to support positive parenting, which outline four key areas of focus: 1) care and protection, addressing children’s need for love and safety; 2) structure and guidance, providing security and predictability by helping children understand rules and accept responsibility for their actions through clear and reasonable limits; 3) recognition, ensuring that children are seen, heard and valued as individuals; and 4) training, understood as fostering the autonomy and independent development of minors.

### 2.2. Media competence and literacy in the family

According to Ferrés and Piscitelli (2012), media competence encompasses the mastery of knowledge, skills and attitudes across six dimensions: languages, technology, interaction processes, production and dissemination processes, ideology and values, and aesthetics. These are applied within two specific areas – analysis and expression – and are essential for 21st-century citizens, given the continuous and daily exposure to media via platforms such as radio, television and social networks.

The benefits of fostering media and information literacy within the family environment have been widely documented. For instance, Kotrla Topić *et al.* (2020) found that lower use of tablets or smartphones by children for entertainment during a typical week, higher maternal educational levels and more frequent parental engagement in interactive reading were positively associated with improved letter recognition in children.

Similarly, Wang and Xing (2018) emphasised that parental involvement and socio-economic status are significant predictors of children's digital citizenship. This study highlights the importance of fostering positive social change by equipping both parents and educators to promote online safety and digital citizenship.

In a cross-national study, Guess *et al.* (2020) evaluated a media literacy campaign conducted across fourteen countries, which equipped participants with tools to detect fake news. The results indicated a measurable improvement in participants' ability to distinguish between true and false news headlines.

Likewise, Austin *et al.* (2020) assessed a family-centred media literacy intervention designed to empower parents and children aged 9 to 14 to use media critically in order to reduce the influence of marketing, enhance nutritional knowledge, improve food choices within the home and encourage the consumption of fruits and vegetables. The findings underscored the importance of parental and youth media literacy and highlighted the role of family communication dynamics regarding nutrition. Positive outcomes included improved use of nutritional labels by parents and increased fruit and vegetable consumption among children.

### 2.3. Digital competence development in the family

Digital competence is defined as:

[...] the set of knowledge, skills, attitudes, strategies and values that are put into action when we use ICT and digital media to perform tasks, solve problems, communicate, process information, collaborate, create and share content and create knowledge in an effective, efficient, appropriate, critical, creative, autonomous, flexible, ethical and reflective way for work, leisure, participation, learning, socialisation, consumption and empowerment (Ferrari, 2012, p. 30).

Although access to information and communication technologies (ICT) appears to be largely resolved due to their ubiquity, a phenomenon known as the triple digital divide persists. This divide comprises three dimensions: access (physical, motivational and literacy-related), use (including device type, frequency, duration, location and associated skills) and appropriation, which refers to meaningful use and the actual benefits ICT offers in everyday life (Gómez-Navarro *et al.*, 2020).

According to Paredes-Labra *et al.* (2021), it is not sufficient to possess basic ICT skills; instead, a comprehensive mastery is required – one that integrates new technological environments into the daily lives of citizens. This broader vision enables the full development of digital citizenship, encompassing dimensions such as social justice, emancipatory and alternative technologies, and collective identities, as also suggested by Fernández-Prados *et al.* (2021).

In this regard, the European Commission undertook the task of mapping the components required for the meaningful use of ICT, culminating in the European Digital Competence Framework for Citizens (DigComp) (Ferrari, 2013). The objective of DigComp is to guide the development of digital competence from an early age, in order to enable individuals to derive benefits from the internet across social, economic, political, health and cultural domains (Van Deursen, 2010). DigComp adopts a comprehensive perspective, identifying five core areas of digital competence: 1) information, 2) communication, 3) content creation, 4) safety and 5) problem solving (European Commission, 2014; Ferrari *et al.*, 2014; European Commission, 2016).

As a result of this initiative, and through various regulatory developments recognising digital competence as a basic skill within compulsory education, Spain formally integrated it into its educational legislation in 2006 (Paredes-Labra *et al.*, 2021).

Furthermore, a study conducted among education degree students at the International University of Valencia (Cuevas *et al.*, 2020) found that participants viewed the family as more responsible than the school for promoting digital competence, identifying it as a key agent in the development of minors.

## 2.4. Parent training programmes

The interrelation between parental, media and digital competences is widely acknowledged, as is the imperative for specific training for parents. In response, various online initiatives have been developed to support families in enhancing these competences. One such initiative is *Media Detective Family*,<sup>1</sup> an online programme aimed at protecting young children against the persuasive effect of tobacco and alcohol marketing. Through structured activities and media analysis tasks, families are encouraged to uncover hidden advertising messages. According to its developers, the

programme effectively reduces underage drinking and tobacco use, and is described by participating families as engaging, age-appropriate and easy to use.

Scull *et al.* (2020) evaluated the use of *Media Detective Family* in a sample of 83 families, confirming its effectiveness as an online prevention strategy to reduce substance use in minors.

Similar initiatives include the *Parent-Based Media Literacy Education and Parent-Child Communication Program for the Prevention of Substance Use Among Middle School-Aged Students*<sup>2</sup>, which provides self-paced, interactive training for parents. This programme integrates media literacy and mediation skills with knowledge of child development and substance use, while also promoting effective parent-child communication through a customisable software application.

Focusing on sexual health, the *Media Aware Parent programme*<sup>3</sup> offers an interactive online learning environment that supports parents in communicating with adolescents around issues of media influence and sexual health. It aims to improve communication and mediation skills and offers medically accurate, evidence-based information on sexual health. Scull *et al.* (2020) evaluated the *Media Aware Parent* programme in a study involving 56 parents of seventh and eighth-grade students in the United States. Their findings indicated that the programme fostered new conversations around sexual health and reinforced the importance of open parent-adolescent dialogue.

*Innovation Research & Training (iRT)*<sup>4</sup> is a behavioural science research organisation that focuses on identifying and resolving important real-world problems for children, families, communities and organisations. By applying scientific theories, empirical findings and methodological approaches, iRT researchers design and evaluate behavioural, educational, psychological, social and community-based assessment, prevention and intervention programmes and services. Key initiatives include online media literacy programmes for families, substance use prevention projects targeting primary school pupils and workshops for families addressing the same issue.

At the national level in Spain, the National Cybersecurity Institute (INCIBE)<sup>5</sup>, under the Ministry of Economic Affairs and Digital Transformation, provides further support for families. The primary aim of this institute is to strengthen digital trust, enhance cybersecurity and resilience, and contribute to the digital economy by promoting the safe use of cyberspace in Spain. INCIBE offers a dedicated section for families on its website, which includes educational resources on digital literacy, parental mediation, cybersecurity and tools for parental control.

## 2.5. Parental training in scientific research

As previously discussed, various training initiatives have been developed to support families. In the context of Spain, Ramírez-García and Aguaded-Gómez (2020) identified seventeen programmes aimed at family training, using the WoS, Scopus and Dialnet databases as reference sources. According to several authors (Carneiro-Barrera *et al.*, 2019; Cabrera, 2020), it is essential to conduct studies that examine publications addressing a specific topic over a defined period. To this end, bibliometric studies, understood as a branch of scientometrics, are necessary (Marín-Aranguren and Trejos-Mateu, 2019).

Bibliometrics functions as a tool for analysing research activity through indicators derived from scientific output (Mingers and Leydesdorff, 2015). These indicators capture diverse dimensions of scientific production, such as the generation of new knowledge, its impact as reflected in citation analysis (Waltman, 2016), its multidisciplinary nature (Arencibia-Jorge *et al.*, 2022) and the formation of collaborative networks (Ding *et al.*, 2014). When applied appropriately, these indicators can be used to characterise institutions, countries, disciplines or fields of study (Van Raan, 2005), offering valuable insights for the development of scientific policies and research strategies aligned with societal and scientific demands and challenges.

A notable precedent for bibliometric studies related to family training can be found in the work of Ruiz-Marín and Hernández-Prados (2016), who emphasised the importance of coordinated, professional approaches to family education. Nevertheless, there remains a notable scarcity of bibliometric studies specifically focused on the family – particularly those addressing the intersection of digital, media and parental competences. This gap highlights the relevance and timeliness of the present research. The objective of this study is therefore to provide a foundational characterisation of the scientific literature on family training in parental, media and digital competences. Using a range of bibliometric indicators, the analysis will be conducted at both the international level and with special attention to Spain. The findings will enable the development of a comprehensive map of the current state of research on the topic, allowing for the quantification of scholarly output, the identification of under- and over-researched areas and the mapping of patterns and networks of scientific collaboration.



### 3. Methodology

The present study employs bibliometrics as a methodological approach to analyse scientific production. To ensure clarity and transparency in the presentation of the research process, the PRISMA 2020 protocol was followed (see Figure 1).

Regarding the metric data, the Scopus database was selected as the primary data source, in line with the criteria established by Visser *et al.* (2021). Data were retrieved during the period from 1 to 15 September 2023. The timeframe of analysis spans from the year 2000 to 2022. This range was deliberately chosen based on a preliminary review, which revealed that documents published prior to 2000 significantly skewed the results, as their content was largely unrelated to the focus of the present study. The search strategy was designed in consultation with experts in the relevant field, aiming to strike a balance between comprehensiveness and precision. Care was taken to avoid retrieving articles that, although methodologically related, diverged substantially from the core subject of the research.

A total of 4,316 documents were retrieved, of which 4,294 were successfully imported. The loss of 22 documents was due to technical issues and connection errors between the tools used (Scopus and SciVal). However, this minor data loss did not affect the overall integrity of the analysis. The data exported from Scopus consisted of the full metadata associated with the scientific publications.

To process and visualise the large volume of data and their interrelationships, network analysis was employed, providing visual insight into the structure of the dataset. A further advantage of this approach is the use of clustering techniques, which group nodes according to the strength of their interrelations.

For the analysis of co-word, category and international collaboration networks, the visualisation software VOSviewer (version 1.6.19) was used.

Initial graph outputs revealed the presence of ambiguous terminology, as well as the use of plurals, synonyms and indexing terms generated by the Scopus algorithm. Based on a preliminary analysis of the keywords extracted from VOSviewer, a thesaurus was constructed using occurrence and relevance data to inform the layout process. This enabled the refinement of the visual maps by focusing on the top 1,000 terms with an occurrence threshold of  $\geq 5$ , while excluding non-significant or redundant terms.

Figure 1  
*Methodological indicators of the study*

Indicator	Description	Justification
Eligibility criteria	1. Study period: 23 years (2000–2022) 2. Document typology: all types encoded in the database	1. Start of search: beginning of the millennium. 2a. Address each of the possible disciplines involved 2b. Different publication and citation patterns according to researchers' area of knowledge
Sources of information	1. Scopus 2. SciVal (metrics)	1a. Greater journal coverage 1b. Higher total citation count 1c. Greater coverage by scientific discipline 1d. Greater categorisation
Search strategy	TITLE-ABS-KEY ("digital skills" OR "media skills" OR "parenting skills" OR "parenting competence" OR "parental media use" OR "media education" OR "positive parenting" OR "digital competence" OR "media competence" OR "media information literacy") AND (TITLE-ABS-KEY ("traini*") OR TITLE-ABS-KEY ("program*")) AND PUBYEAR > 1999 AND PUBYEAR < 2023	General search of terms representing main area of interest
Study selection process	1. Consultation date: 01/09/2023–15/09/2023 2. Search field: "Title", "Abstract" and "KeyWords" 3. Selection: whether or not the work is indexed in the database	Article textual content fields commonly used in bibliographic information retrieval
Data extraction process	1. Exported in CSV format for processing in Microsoft Access database and analysis via SciVal 2. Post-processing conducted in Microsoft Excel 3. Use of VOSviewer software version 1.6.19 4. List of journals indexed in Scopus downloaded and integrated into the ad hoc system	1. Analysis and generation of indicators 2. Production and category data exported to generate graphs 3. Information processing (co-word, category and country collaboration networks) 4. Categorisation of retrieved works: 27 major scientific areas and 334 thematic categories
List of data	1. Scopus, N = 4,316 – 22 documents (N = 4,294) 2. SciVal. Metrics: N works, N citations, % works cited at least once, average citation per work, % works published in Q1 and D1 journals according to the SJR indicator, % of works in D1 by global citation volume, normalised impact by category vs world average, and % of works produced in international collaboration	1a. Snowball Metrics, n.d.

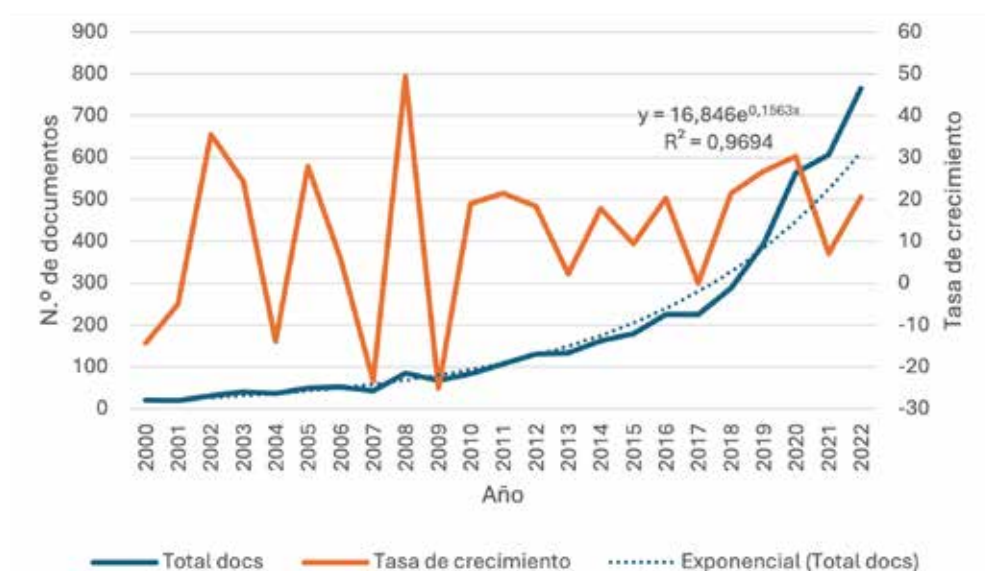
Source: own research.

## 4. Results

By analysing the production data, a continuous and growing interest in the subject under study is evident, as can be seen in the sustained growth rate and the stable upward trend in production since 2010. Notably, a marked increase in output is detected from 2018 onwards, which may be attributed to various public initiatives in the previous two years – such as the key documents published by the European Commission in 2014 and 2016 (see Figure 2).

**Figure 2**

*Evolution of scientific production*



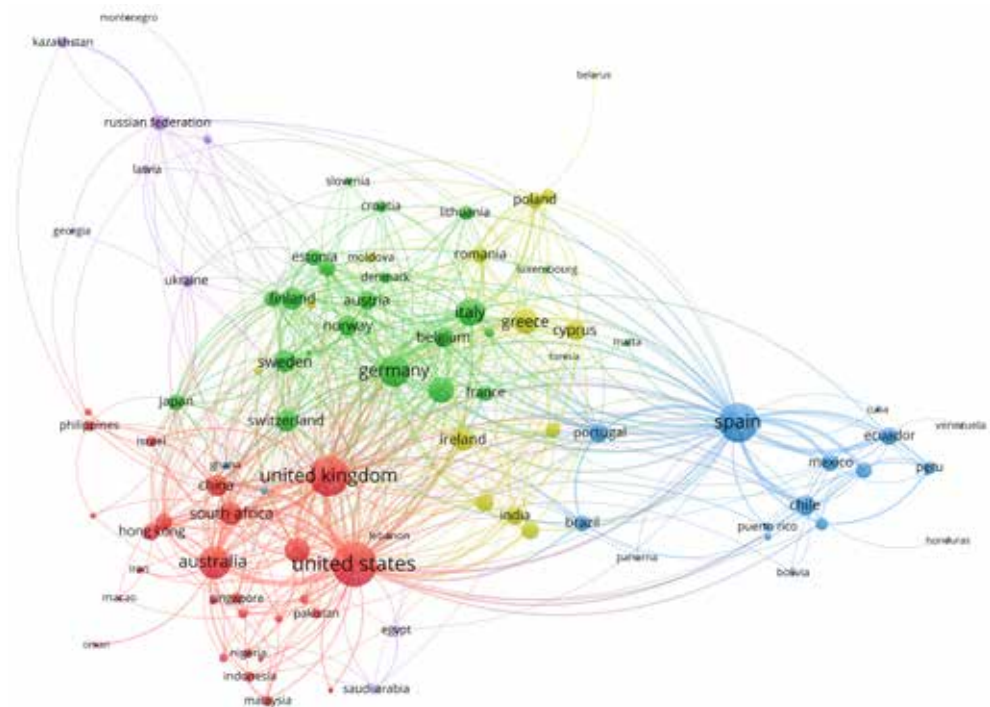
Source: own research.

The results indicate that 120 countries contribute to the scientific production related to the study's focus, with 75.32% of the output concentrated in just 10 countries, each producing at least 100 documents. These leading countries, ranked by production volume, are the United States, Spain, United Kingdom, Australia, Germany, Russia, Canada, Italy, the Netherlands and Portugal. It is important to note that collaborative relationships can sometimes cause inflated counts due to co-authorship between countries. Figure 3 presents a social network analysis of country-level collaboration, where nodes represent countries and illustrate the structure of their existing collaborative relationships. The colour clusters formed reveal a clear tendency to group countries based on geographical proximity – such as within the European

Union – and/or shared cultural or linguistic ties, for example, the United Kingdom with its former colonies, and Spain with Latin America. Additionally, the research interest in this topic across different regions may reflect the influence of public policies implemented in those areas.

**Figure 3**

*Structure of relationships between countries*

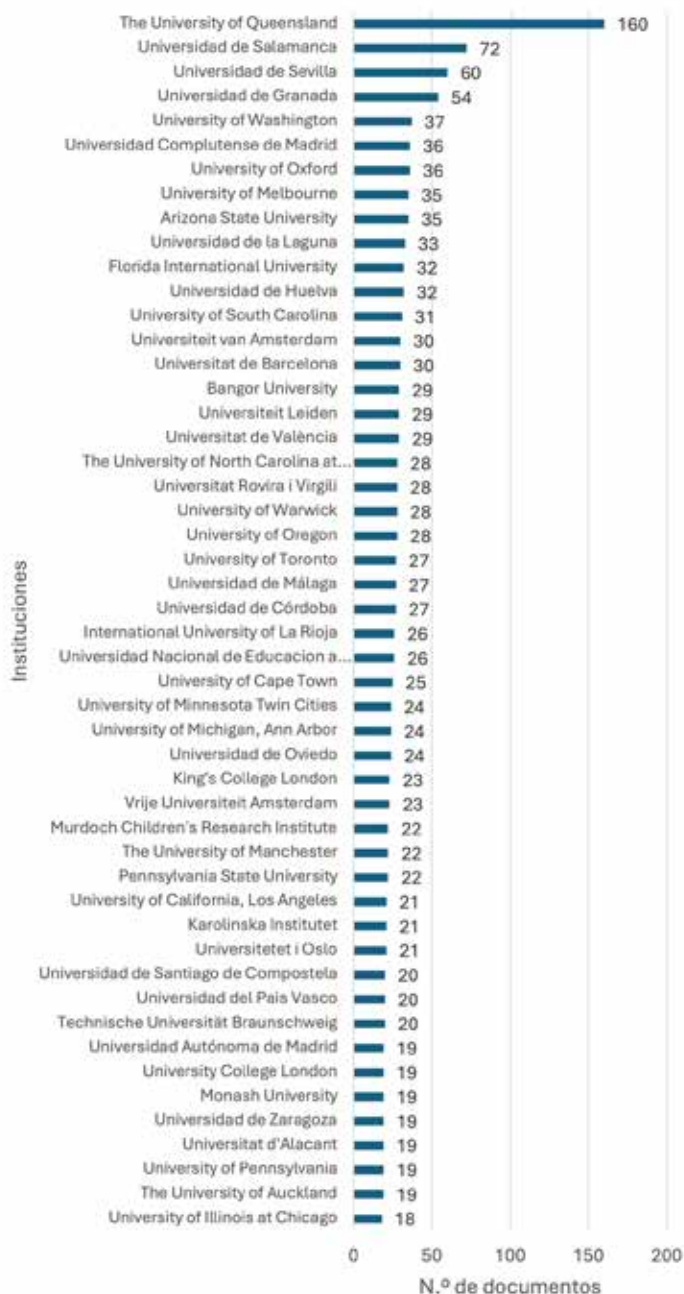


Source: own research.

The analysis of the leading institutions (Figure 4) highlights that Spain is notably represented, with 19 universities among the top 50 producers. Overall, Spain has 32 universities with a production of 10 or more documents included in the international ranking.

**Figure 4**

*Main producing institutions (number of documents)*

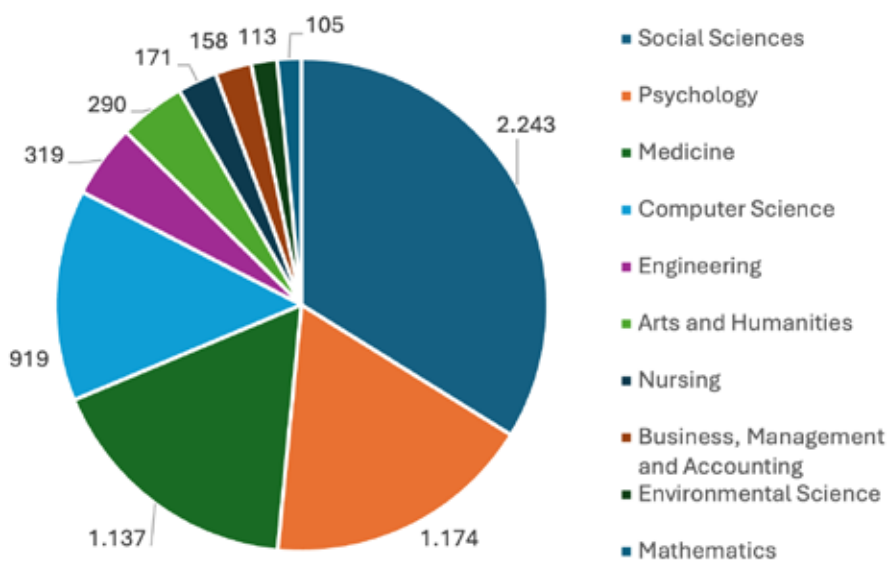


Source: own research.

The analysis of document typologies provides insight into how scientific knowledge is communicated across disciplines. While “Article” dominates the dataset with 3,124 documents, other types such as “Conference article” (597), common in engineering-related fields, and “Book chapter” (250), “Reviews” (236) and “Book” (29), which are more prevalent in the humanities, also hold significant presence. As illustrated in Figure 5, the majority of retrieved documents ( $\geq 100$ ) are classified within major areas such as social sciences, psychology, medicine and computer science. Scopus categorises scientific knowledge into 27 broad areas, with this dataset covering 26 of them. Some documents appear in categories distant from the study topic due to retrieval noise – unavoidable without manual filtering – but these outliers do not significantly affect the overall counts or the interpretation of subsequent visualisations.

**Figure 5**

*Main thematic areas ( $\geq 100$  documents)*



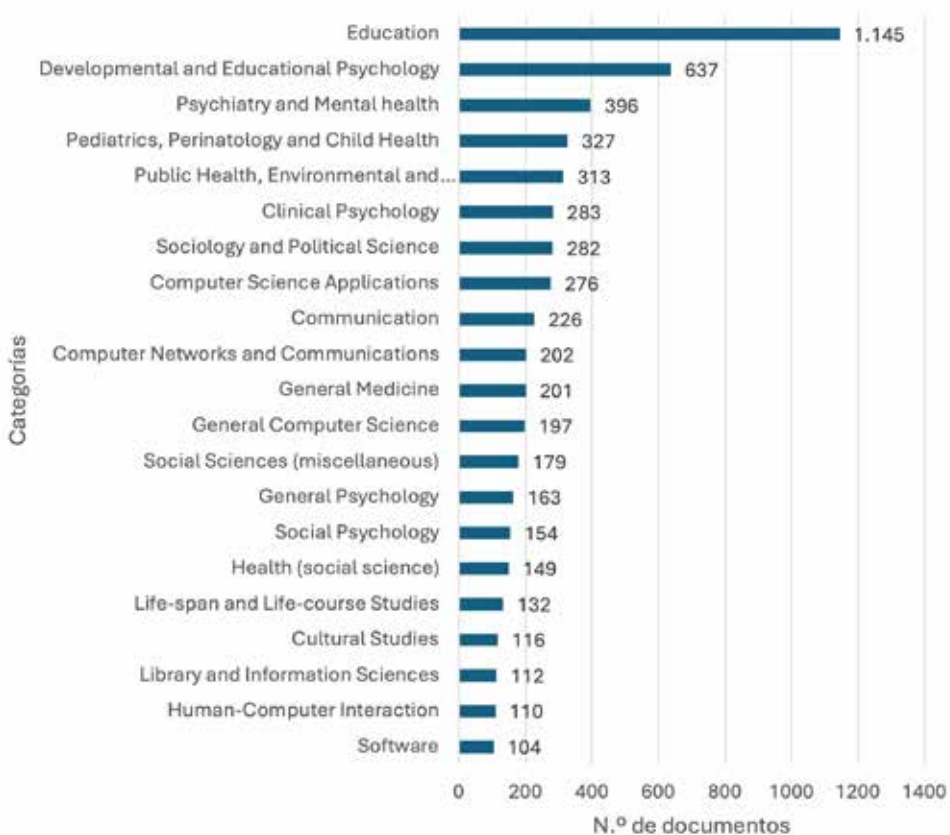
Source: own research.

In addition to the major areas, Scopus classifies knowledge into 334 more specific categories. Analysing the categories assigned to journals provides a more detailed insight into specific content. Due to imperfect matching between Scopus document

titles and the indexed journal list in the database, some documents are lost in this process. On this occasion, the losses consist mainly of conference articles, books and book chapters, totalling 476 documents from 396 sources. This represents an effective pairing of 88.97% of the documents, which is sufficiently significant to carry out a categorisation analysis (see Figure 6). The results show that education, psychology and health are the primary focuses, followed by technology-related fields.

**Figure 6**

*Production by categories ( $\geq 100$  documents)*

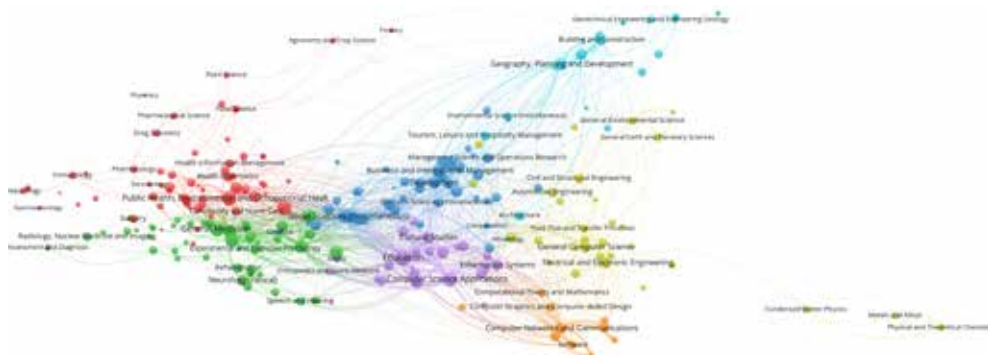


Source: own research.

The complete study based on the network analysis of category relationships supports the above, as shown in Figure 7 and detailed further in Annex 1. In this case, the representation was created from a relationship matrix where the nodes (Scopus categories) are connected by lines (edges) based on their co-occurrence in documents.

The centrality of social and educational perspectives in studies on training in the competences examined is justified by the intermediation of categories in the blue and violet clusters (Figure 7). Notably, there is a clear connection between health and behavioural sciences, including medicine and psychology. Links also exist between education sciences (purple cluster) and computer sciences (orange cluster), engineering (green cluster) and social sciences (blue cluster). Finally, relationships among education sciences (purple cluster), social sciences (blue cluster) and behavioural sciences (green cluster) are evident.

**Figure 7**  
*Category co-occurrence map*



Source: own research.

On the other hand, Table 1 presents a broad overview of the data set. While the overall data offer insights into the quality of the research analysed in this study, a comparative analysis with Spain across different thematic areas reinforces this view. For example, by examining a sample of the five main categories by production volume (Table 2), it is evident that nearly all relative indicators in our data set exceed those of the corresponding categories in Spain. The only exception is the percentage of international collaboration, which is lower in our data set; however, this is justified by the more localised nature of these research lines and training programmes developed within the country.



**Table 1**

*Metrics of the analysed documents*

Indicator	Description	Documents
Docs	Documents	4294
Citations	Citations	84552
C x D	Citations per document	19.7
% Q1	% documents in Q1 (according to SJR)	43.7
% D1	% documents in D1 (according to SJR)	18.7
% docs cit.	% documents cited	83.9
% docs 10%	% documents within the 10% most cited worldwide	12.3
FWCI	Field-weighted citation impact (FWCI)	1.27
% inter. collab.	% international collaboration	17
% nat. collab.	% national collaboration	34.1

Source: own research. SJR: SCImago Journal Rank.

**Table 2**

*Indicators of the main categories by volume of production*

	Docs.	Citations	C x D	% Q1	% D1	% docs cit.	% docs 10%	FWCI	% inter. collab.	% nat. collab.
<b>Education</b>										
Study data	1275	19945	15.6	28.3	10.1	87.8	13.3	1.55	16.2	27.9
Spain	37781	443045	11.7	24.4	9.1	82.7	5.9	1.05	22.8	21.3
<b>Developmental and Educational Psychology</b>										
Study data	635	22254	35	25.5	14.2	93.7	18.7	1.33	18.1	40.3
Spain	9380	179389	19.1	23.5	7.9	90.4	10.1	1	31.7	25.2
<b>Psychiatry and Mental Health</b>										
Study data	391	18989	48.6	53	28.8	93.4	23.5	1.39	19.4	47.1
Spain	21127	615809	29.1	54.9	25.5	89.5	16.8	1.27	42.4	33.3
<b>Paediatrics, Perinatology and Child Health</b>										
Study data	328	12472	38	57.4	34	93	20.4	1.46	14	49.1
Spain	21397	249881	11.7	24.8	9.6	70.2	5.4	0.78	19.2	35.8
<b>Public Health, Environmental and Occupational Health</b>										
Study data	309	9011	29.2	50.5	17.1	92.6	17.2	1.21	25.2	45.6
Spain	29303	613852	20.9	35.2	17	87.5	12.6	1.09	40.1	32.6

Source: own research.

## 5. Discussion of results and conclusions

The objective of this study is to provide a foundational characterisation of the scientific literature on family training in parental, media and digital competences using a range of bibliometric indicators at both the international level and with special attention to Spain. The result is the creation of a visual map outlining the current state of research on the topic.

The findings reveal an exponential growth in scientific interest in training families across different competences – media, digital and parental. The data indicate a steady increase in the number of publications addressing this subject. This growth may be linked to regulatory frameworks and initiatives such as those by the Council of Europe (2006) and the European Commission (2014, 2016) promoting positive parenting and digital competence and UNESCO's advocacy for media and information literacy.

The fact that countries such as Spain, Germany, Italy, the Netherlands and Portugal rank among the top ten producers in this field further supports this assumption, especially considering Europe's DigComp framework for digital competence development.

Regarding document typologies, journal articles dominate the dataset, reflecting standard scientific dissemination practices. However, there is also a significant presence of conference articles, reviews, books and book chapters, highlighting the interdisciplinary nature of this research area. This interdisciplinarity is further supported by the analysis of the main thematic areas of these publications, which include social sciences, psychology, medicine, computer science, engineering, arts and humanities, nursing, management and business, among others. Network analysis of subject categories also confirms this broad interdisciplinary approach.

Scientific collaboration is increasingly essential in contemporary research, as it enhances visibility through citations (Guerrero-Bote *et al.*, 2013) and fosters interdisciplinarity – especially critical for parental training, given the family's fundamental societal role.

Regardless of theoretical considerations and the literature on measuring interdisciplinarity in science (Ávila-Robinson *et al.*, 2021), this research demonstrates that the topic spans nearly all thematic areas defined by Scopus.

Through various bibliometric indicators, we have successfully mapped and visualised the scientific production related to family training in digital, media and parental competences.

Nevertheless, a key limitation of this study lies in the need for deeper analysis of each document selected to determine whether they describe institutional training programmes specifically aimed at developing families' digital, media or parental competences or researcher-led initiatives and proposals. Future work could also scrutinise the strengths and weaknesses of these programmes, identifying those with the greatest potential for success. Additionally, it would be beneficial to categorise the thematic focus of these programmes, such as nutrition, fake news detection, environmental issues or violence prevention.

Despite its interdisciplinary scope, the metric analysis of the dataset compared to Spain in the main categories confirms the high quality of this research. Nearly all bibliometric indicators for this dataset exceed those for Spain in the corresponding categories. Citation data in particular illustrate the visibility and impact of these works on subsequent research. Fields such as education, developmental psychology, psychiatry, paediatrics, child health and public health stand out, with field-weighted impact values (FWCI) consistently above both the global and Spanish averages. Similarly, the proportion of works within the top 10% most cited globally underscores the excellence of the science produced.

Furthermore, as a continuation of this research, we propose comparing the results with emerging metric frameworks derived from the interaction between scientific communication and social media, which enable the study of science's behaviour in academia in relation to society at large. Altmetrics, although still in early stages with varying data source reliability (Ortega, 2018), are gaining recognition as indicators of the social impact of research and represent a promising avenue for future studies.

In short, families must be well equipped to navigate a screen-dominated society where children are particularly vulnerable if their parents lack sufficient training. Scientific research can help identify the most effective training approaches and the disciplines best suited to develop them.

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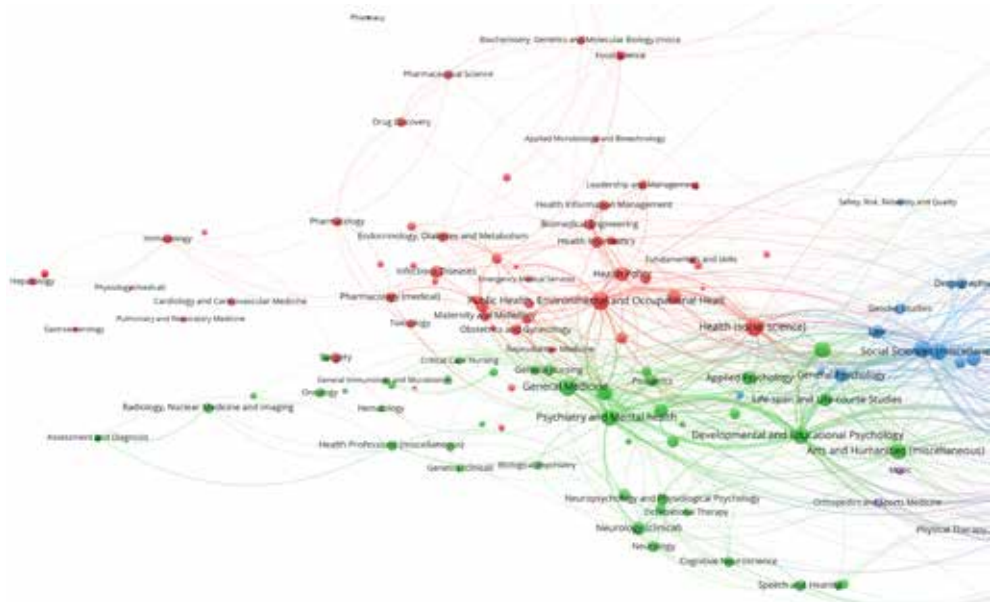
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## Annex 1

**Figure 7a**

*Category co-occurrence map. Enhanced view 1*

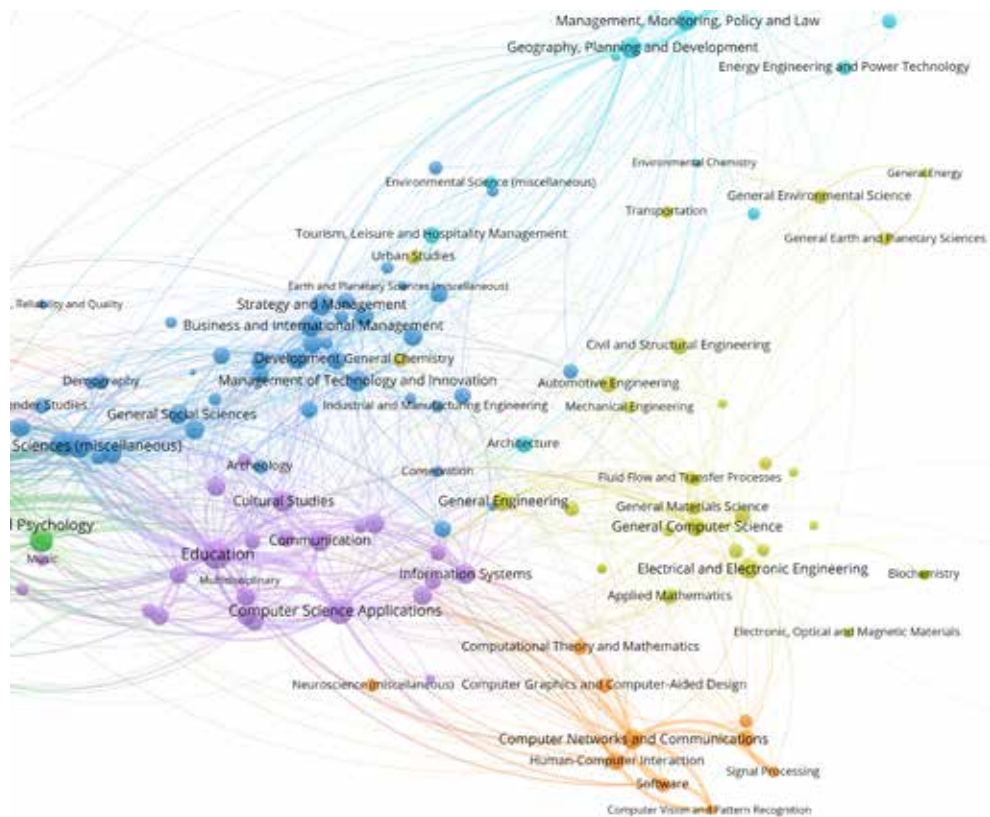


Source: own research.



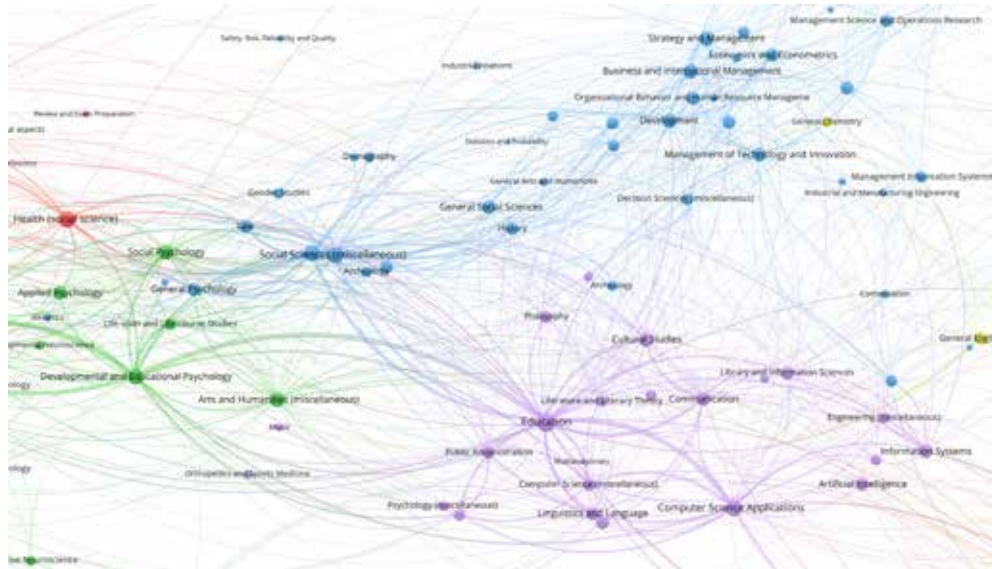
**Figure 7b**

*Category co-occurrence map. Enhanced view 2*



Source: own research.

**Figure 7c**  
Category co-occurrence map. Enhanced view 3



Source: own research.

## Notes

- 1 <https://mediadetectiveprograms.com/media-detective-family-2/>
- 2 [https://irtinc.us/avada\\_portfolio/parent-based-media-literacy-education-and-parent-child-communication-program-for-the-prevention-of-substance-abuse-among-middle-school-aged-students/](https://irtinc.us/avada_portfolio/parent-based-media-literacy-education-and-parent-child-communication-program-for-the-prevention-of-substance-abuse-among-middle-school-aged-students/)
- 3 <https://mediaawareparent.com/>
- 4 <https://irtinc.us/>
- 5 <https://www.incibe.es/>

## Antonio González-Molina

With a Bachelor's Degree in Documentation, a Master's Degree in Information Technology and Document Management and a Diploma of Advanced Studies (DEA), all from the University of Granada, he is the founder of several businesses related to scientific information and information technologies. In addition, he is a member of the research group HUM466, an advisor to the SCImago Research Group and head of the University of Córdoba's Scientific Evaluation Information Unit. His main lines of research include classic and alternative metrics for scientific analysis and evaluation, scientometrics for science policy advice, international rankings of research institutions, scientific information databases and visualisation tools and open science.

## Rocío Gómez-Moreno

A lecturer in the Area of Education Theory and History at the University of Córdoba's Faculty of Education Sciences and Psychology, she holds a PhD in Education, also from the University of Córdoba, and a Master's Degree in Inclusive Education. She is currently engaged in educational research and teaching in the Early Childhood Education and Social Education degree programmes. Her main research interests include family relationships, electronic devices and minors, positive parenting, and media education. Additionally, she has participated in various scientific conferences and contributed to several book chapters.

## Lucía Ballesteros-Aguayo

In addition to holding a PhD *Summa Cum Laude* with international mention, she holds degrees in journalism, advertising and public relations, as well as a Master's Degree in Teacher Training from the Complutense University of Madrid. She is currently a lecturer at the University of Málaga's Faculty of Communication. Her lines of research include communication, disinformation, propaganda and media studies. She has authored numerous books and book chapters on digital platforms, disinformation and educommunication and has served as scientific editor and main organiser of international seminars and expert courses. The results of her research have been published in leading national and international media outlets.

## Antonia Ramírez-García

Antonia is a tenured lecturer in the Area of Education Research and Diagnosis Methods at the University of Córdoba's Faculty of Education Sciences and Psychology. A doctor of education, she is currently Director of Teacher Training and Innovation at the University of Córdoba, a member of the research group SEJ-589 and secretary of the AlfaMed inter-university research network. Her research focuses on media competence and education, educational guidance and positive parenting. She has also been invited as a guest lecturer at several universities in Europe – including the University of Lancaster in the UK, Jan Kochanowski University and Świętokrzyska University in Kielce, Poland, and Mykolas Romeris University in Vilnius, Lithuania – and the Americas, such as the Metropolitan University of Education Sciences in Santiago de Chile and the University of Concepción, Chile.

## M<sup>a</sup> Pilar Gutiérrez-Arenas

A graduate in psychopedagogy and doctor of education, she holds the position of associate professor in the Area of Education Research and Diagnosis Methods at the University of Córdoba's Faculty of Education Sciences and Psychology and is permanent lecturer at the university. In addition, she is currently director of the institution's UCODigital platform. Aside from her academic work, she is coordinator of the Andalusian Collective of Education and Communication of Córdoba. As part of her research, she is a member of the AlfaMed inter-university research network and a member of the research group SEJ-589, having been awarded two six-year research periods. Her research centres around technologies applied to education, social media and education, and technological leadership in schools.

## ARTICLES/ARTÍCULOS

# The Socio-demographic Factors with the Greatest Influence on the Transition to Coupledness in Spain

Los factores sociodemográficos que más influencia tienen en la transición a la vida en pareja en España

**F. Javier Sánchez Galán**

University of Valladolid, Spain  
[franciscojavier.sanchez.galan@uva.es](mailto:franciscojavier.sanchez.galan@uva.es)

**Noemí García Sanjuán**

International University of La Rioja, Spain  
[noemi.garcia@unir.net](mailto:noemi.garcia@unir.net)

**Manuel Monroy Vega**

Autonomous University of Madrid, Spain  
[manuel.monroy@uam.es](mailto:manuel.monroy@uam.es)

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## ABSTRACT

This study investigates the influence of socio-demographic and economic variables on the decision to live as a couple among young Spaniards aged 25 to 34. Using data from the 2022 Living Conditions Survey, a descriptive analysis and a binary logistic regression model were conducted. The results indicate that women are more likely to cohabit than men. In addition, factors such as economic activity, income and nationality are key determinants in this decision. The profile least likely to live as a couple is that of a 25-year-old man with university education, of Spanish nationality, not economically active and with low to medium income. By contrast, the profile with the highest likelihood corresponds to a 34-year-old woman with only primary education, not of Spanish nationality, economically active and with high to medium income. These findings highlight the importance of economic stability and labour market integration in the transition to adulthood.

**KEYWORDS:** transition; youth; coupledness; socio-demographic factors; economic activity; educational level.

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## ABSTRACT

Este estudio investiga la influencia de variables sociodemográficas y económicas en la decisión de vivir en pareja entre jóvenes españoles de 25 a 34 años. Utilizando datos de la Encuesta de Condiciones de Vida de 2022, se ha llevado a cabo un análisis descriptivo y un modelo de regresión logística binaria. Los resultados indican que las mujeres tienen una mayor probabilidad de cohabitar que los hombres. Además, factores como la actividad laboral, los ingresos y la nacionalidad son determinantes en esta decisión. El perfil con menor probabilidad de vivir en pareja es un hombre de 25 años, con estudios superiores, español, no activo laboralmente y con renta media baja. En contraste, el perfil con mayor probabilidad es una mujer de 34 años, con estudios primarios, no española, activa laboralmente y con renta media alta. Estos hallazgos subrayan la importancia de la estabilidad económica y la inserción laboral en la transición hacia la vida adulta.

**KEYWORDS:** transición; juventud; vida en pareja; factores sociodemográficos; actividad laboral; nivel educativo.

## 1. Introduction

The decision to form a couple is a phenomenon inherent to human beings, shared with other animal species, and involves both a biological component, related to reproduction, and a social one (Gámez and Díaz-Loving, 2012). In contemporary societies, monogamy predominates as the norm (Hernández, 2022; Rodríguez, 2024), although it cannot be regarded as a cultural universal. There is historical evidence from various cultures that practise polygamy, whether polyandry (one woman with several men) or polygyny (one man with several women) (Alshboul, 2007; Bituga-Nchama, 2023). Beyond biological and social factors, the decision to form a couple is also influenced by personal, emotional and sexual factors (Moreno and Gutiérrez, 2021), as well as by opportunity. Requena and Ayuso (2022) reflect this diversity in the factors that have historically influenced couple formation and continue to do so today, ranging from economic factors to the influence of new information and communication technologies. However, beyond the diversity highlighted in the literature, there may be common elements that lend themselves to study. This research focuses on assessing how socio-demographic and socio-economic variables may facilitate or hinder coupledness and, by extension, the formation of new family units.

In Spain, most children are born within couples, though not necessarily within marriage. Data from the National Statistics Institute (Instituto Nacional de Estadística – INE) show that the proportion of children born to unmarried couples increases each year; in 2023, it stood at 49.96%.<sup>1</sup> In any case, it is clear that parenthood is most commonly undertaken within some form of couple, as also noted in various sources cited in Ayuso's study (2022). Given that fertility rates in Western

societies – and particularly in Spain – are significantly below replacement level, having declined from 3.3 children per woman in the 1960s to 1.12 in 2023,<sup>2</sup> it seems reasonable to suggest that fostering coupledness could contribute to increasing these figures.

The decision to live as a couple is a transitional event that has received relatively little scholarly attention and is closely linked to leaving the parental home and entering parenthood (Donat and Martín-Lagos, 2020). The literature reveals a relationship between nuptiality and fertility (Fuentes, 2010; Quintana, 2018). Nevertheless, coupledness does not necessarily begin with marriage, as there are other forms of union, with or without legal recognition, that may likewise be considered transitions into coupledness. The decision to enter into a legally recognised partnership is often preceded by cohabitation. Having a partner is a necessary step towards living as a couple and is one of the variables most strongly associated with residential emancipation (South and Lei, 2015; Donat and Martín-Lagos, 2020). It is important to clarify at this point that, although having a partner may precede moving out and living as a couple, this is not the focus of the present study.

The study of youth transitions – particularly couple formation and cohabitation – is crucial not only because of its intrinsic significance but also due to its far-reaching demographic implications. These events are closely linked to fertility, which in Spain and across Europe is generating major challenges, such as imbalances between the working-age and dependent populations and increasing pressure on the sustainability of pension systems and healthcare provision. Demographic indicators – particularly fertility rates and life expectancy – are reshaping the population pyramids in Western societies, with fertility remaining below the replacement level of 2.1 children per woman and high life expectancy accelerating population ageing (Esping-Andersen *et al.*, 2013).

This situation gives rise to important economic and social concerns. Moreno (2013) highlights the growing anxiety in Europe over the fact that increasingly smaller cohorts of working-age individuals will make it more difficult to sustain the current social security system. Macunovich (2012) provides empirical evidence of the importance of young cohorts for the economy, with potentially positive effects on gross domestic product. Spain presents a particularly alarming scenario, with one of the lowest fertility rates in Europe and globally (Castro *et al.*, 2021; Llorente-Marrón *et al.*, 2022). In this context, it may be hypothesised that facilitating youth transitions – particularly the formation of new family units – could contribute positively to increasing fertility.

From this perspective, it is relevant to examine the factors that are potentially most influential in the decision to take one of the defining steps in the transition to adulthood: the decision to live as a couple. The main objective of this study is to determine the extent to which certain socio-demographic and socio-economic factors (educational attainment, income, employment status or econom-



ic activity, nationality, age and gender) influence the decision to live as a couple among young people aged 25 to 34. The analysis is based on data from the 2022 Living Conditions Survey (Encuesta de Condiciones de Vida – ECV), which serves as the primary dataset for this study. The chosen age range is supported by the literature (Arnett, 2000; Rivera and Muñoz, 2011; INJUVE, 2020) as well as by the authors' own exploratory studies, which confirm that this is the age group in which cohabitation most commonly begins. Once the most influential factors have been identified, it will be easier to inform public policies aimed at supporting the transition to adulthood, particularly with regard to the decision to live as a couple.

## 2. Theoretical framework. Young people, transitions to adulthood and coupledom

From a sociological perspective, it is difficult to define the concept or social category of *youth*. If we take leaving the parental home and the formation of new family units as reference points, then an 18-year-old who has moved out and has a partner would not be considered young, whereas someone who remains in education beyond the age of 30 and has yet to move out may still be regarded as such. This highlights how the age range used in youth studies is becoming increasingly broad, often extending well beyond the age of 30, despite the evident differences between an 18-year-old and a 30-year-old. A purely age-based perspective presents significant limitations. From a sociological standpoint, youth can be understood more as a process than a state (Zárraga, 1989; Furlong, 2006; Galland, 2007; Casal *et al.*, 2011).

The transition to adulthood is marked by a series of events or *rites of passage*, which unfold in highly diverse ways. This diversity makes it possible to define different types of transition depending on the variables or elements taken into account. The increasing variety of these transitions and the lack of linearity in the associated events contribute to their growing de-standardisation (Moreno *et al.*, 2010; Sánchez-Galán, 2017). In just a few decades, we have moved from structured and linear processes – such as completing education, entering the labour market and forming new family units – to much more complex transitions. These include simultaneous events, such as studying while working, or reversed processes, such as leaving the parental home and later returning to it (Moreno and Sánchez-Galán, 2020).

In this sense, it is more appropriate to speak of youth as a process in which different transitional events occur throughout the life course. This process culminates in the greater stability that characterises adult life (Leccardi, 2010; Toulemon, 2010).

Youth may be defined from a social perspective in terms of the completion of key transitional events such as finishing education, entering the labour market, leaving the parental home, forming a couple and becoming a parent (Vieira and Miret,



2010; Vieira, 2013). Other studies adopt the *life course* approach, whose overall aim is to analyse how historical events and demographic, economic, social and cultural changes shape people's lives, both individually and by cohort or generation (Elder, 1994; Blanco, 2011). Nevertheless, it must always be borne in mind that individual trajectories are closely linked to social structure and context – including family, environment, peer groups and educational pathways (Urcola, 2003; Casal *et al.*, 2006; Ulrich, 2008; Vieira and Miret, 2010; Moreno *et al.*, 2012). As a result, the transition to adulthood is understood as a process influenced by socio-historical realities, social institutions and young people's own decision-making. Failure to take all of these factors into account hinders a comprehensive analysis of transitional processes (Bird and Kruger, 2005; Furstenberg, 2005; Sánchez-Galán, 2017). In short, the transition or pathway to adult life must be approached from a perspective that integrates structure, agency and history. This constitutes a holistic analytical model, though it presents certain limitations in that it does not consider the reversibility of events or even their potential non-occurrence (Robette, 2010; Iacovoy, 2011).

As already noted, the decision to live as a couple is a relatively under-researched transitional event, yet it is closely associated with residential emancipation and parenthood (Donat and Martín-Lagos, 2020). Several studies explore the factors that may account for the timing of the decision to live as a couple or become a parent (Davía and Legazpe, 2013; Sánchez-Galán, 2017; Mitchell *et al.*, 2017), offering findings such as higher education reduces the likelihood of living as a couple among young people and delays parenthood; being in education decreases the probability of having a partner; and during times of crisis and post-crisis, the likelihood of living as a couple declined in comparison with previous periods. However, an important observation by Moreno *et al.* (2017) underscores the diversity of couple, family and union models as another key factor to take into account. It is therefore relevant to study all forms of emancipated couplehood, irrespective of whether or not the union has legal status. Within this diversity, attention must also be paid to mixed partnerships, which involve their own relational dynamics and occupy a space between national cultural identities and the new influences brought by the migrant partner – a feature particularly evident in reconstituted families (De Miguel Luken, 2022).

Life as a couple is typically preceded by residential emancipation from the parental home. The length of time young people remain dependent on their families of origin is partly driven by the increasing demand for education, which significantly extends this stage of life. Compared with the rest of Europe, Spain is the second-latest country in terms of the average age of emancipation (Donat and Martín-Lagos, 2020). In 2022, the average age of residential emancipation in the EU-27 was 26.4 years, while in Spain it was 30.3 years (Eurostat, 2024). Additional contributing factors include uncertainty and unpredictability regarding the immediate future, particularly in a context of economic change and global crises. This is compounded in Spain by a highly rigid labour market and a housing market characterised by high prices and a limited rental supply (Ballesteros

*et al.*, 2012; Colom and Molés, 2016; Moreno, 2012). Moreover, Spain's welfare state model provides limited support for youth emancipation, thereby reinforcing dependence on the family of origin (Albertini and Radl, 2012; Becker *et al.*, 2010; Vitali, 2010). Behavioural and psychological explanations must also be considered, as they may shape the attitudes of native-born youth. In recent decades, family relationships have become more open, flexible and negotiable (Viqueira, 2024). Young people often find within the family an ideal environment in which to enjoy extensive privileges, services and comforts, all of which contribute to postponing emancipation and life as a couple – particularly in the face of clearly uncertain prospects (Donat and Martín-Lagos, 2020; Meil, 2010). Nonetheless, it is important to take into account the changing profile of youth, which increasingly includes young people from migrant backgrounds. Recent studies such as that by Fuster *et al.* (2024) show that young people of migrant origin tend to begin the emancipation process at earlier ages, influenced by distinct life trajectories and cultural factors.

Analysing the socio-demographic and socio-economic variables that most strongly influence the transition to coupledom is essential for understanding social dynamics and informing the design of policies and programmes that respond to the specific needs of young couples. Such measures may help foster full social integration and, as supported by both the literature and empirical data, positively influence demographic indicators such as fertility.

### 3. Methodology

Based on the literature review and the research question concerning the influence of socio-demographic and socio-economic factors on the decision to live as a couple among young people, the following research hypothesis is proposed: socio-demographic and socio-economic factors exert a significant influence on transitional events in the move to adulthood, particularly the decision to live as a couple. Variables such as educational attainment, income, employment status, age and gender are key elements in analysing the transition to coupledom among young people. The overall aim of this study is to examine and quantify the influence of these socio-demographic and socio-economic factors on the decision to live as a couple.

A quantitative methodology has been employed, based on data from the 2022 Living Conditions Survey (ECV), conducted by the National Statistics Institute (INE).<sup>3</sup> Both descriptive analysis and binary logistic regression analysis will be undertaken. The dependent variable selected is “*living as a couple*”, while the explanatory independent variables are *age*, *nationality*, *gender*, *education*, *economic activity status* and *income*. The data in Table 1 clearly show that the age at which young people decide to live as a couple is concentrated in the upper range of the frequency distribution. For this reason, it was decided that from this point in the study onwards, the age range selected for the subsequent data analysis would be

between 25 and 34 years. From the age of 25, it can generally be assumed that formal education has been completed, thereby avoiding distortions when analysing the influence of educational attainment, since this variable may be closely correlated with age. The ECV provides four microdata files, of which only the P file, containing personal variables, was selected. Variables were transformed and recoded using the microdata and the methodological information provided by the INE. The binary variable "*living as a couple*" corresponds to the variable "*spouse or de facto partner*". This variable has three possible values (*yes with legal status*, *yes without legal status* and *no*), which were recoded by merging the two affirmative categories to construct the binary dependent variable under study, "*living as a couple*", with the values *yes* or *no*. The first stage involves a descriptive analysis, offering an initial approximation of the potential influence of the selected socio-demographic variables on the decision to live as a couple. Subsequently, a logistic regression model will be constructed to explain and quantify the factors that influence this decision.

The defining feature of binary logistic regression is that the dependent variable is dichotomous. In this study, the variable is defined by whether or not the respondent has a spouse or de facto partner. It was coded as follows: 1 = in a couple, 0 = not in a couple. The category with the greater absolute value is the category of interest. A series of independent variables or explanatory factors were selected which, in binary logistic regression, may be either quantitative or qualitative. In the model used, the only quantitative variable is age; the others are categorical. All statistical analyses and variable recoding were carried out using SPSS software.

Independent variables:

*Age*: the only numerical variable, calculated by subtracting the *year of birth* from the *survey year*.

*Gender*: a categorical variable coded as 0 for men and 1 for women.

*Nationality*: provided in the ECV with the categories *Spain*, *Other EU countries* and *Non-EU countries*. It was recoded into two categories: *Spanish* and *foreign*. The reference category is Spanish nationality.

*Educational attainment*: originally offered in nine categories in the ECV, this variable was recoded into two: *university-level* and *non-university-level education*. Reference category: non-university-level education.

*Economic activity status*: the ECV provides a broad range of categories for this variable. For the purposes of this study, these were recoded into two: one comprising all economically active categories and another comprising all non-active categories.<sup>4</sup> Reference category: economically active.

*Net annual monetary income per person*: although a numerical variable, it was grouped into two categories: up to €14,000 annually and over €14,000 annually. This threshold was selected based on the average per capita net annual income in 2022,<sup>5</sup> which was approximately this amount; for simplicity, the figure was rounded. Reference category: €14,000 or less.

At a significance level of 0.05, the null hypothesis posits that there are no statistically significant differences between the reference categories and the others in explaining the decision to live as a couple.

## 4. Data analysis and results

### 4.1. Descriptive analysis

This section presents a descriptive analysis of the variables under study. It provides an initial overview of the potential influence these variables may have on the dependent variable, namely having a *spouse or de facto partner*.

The first interpretation suggested by the data in Table 1 is the clear relationship between age and the likelihood of living as a couple. While this is generally intuitive, some notable nuances emerge when the variable is crossed with *gender*. Table 2 shows that the average age among men is 31.46 years, compared to 31.11 years among women. It is well known that women tend to leave the parental home earlier than men, form partnerships earlier and become mothers at a younger age. However, what is striking here is not so much that women are, on average, 0.4 years younger than men, but rather how small that difference actually is.

**Table 1**

*Percentage of individuals living as a couple by age*

Age	Frequency	Percentage	Cumulative Percentage
25	25	1.7	1.7
26	51	3.4	5.1
27	69	4.6	9.8
28	82	5.5	15.3
29	110	7.4	22.7
30	148	10.0	32.7
31	205	13.8	46.5
32	220	14.8	61.3
33	275	18.5	79.9
34	299	20.1	100.0
Total	1,484	100.0	

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

**Table 2**

*Average age at which individuals live as a couple, by gender*

Gender		N	Minimum	Maximum	Mean
Male	Age	592	25	34	31.46
	N valid (listwise)	592			
Female	Age	892	25	34	31.11
	N valid (listwise)	892			

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

Table 3 presents the distribution of highest level of education completed, following recoding into two categories: individuals with university education and those without. This is a sample in which more than half of respondents report having completed university-level studies.

**Table 3**

*Level of education completed*

	Frequency	Percentage	Valid %	Cumulative %
Non-university-level education	2,042	46.3	46.3	46.3
University-level education	2,367	53.7	53.7	100.0
Total	4,409	100.0	100.0	

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

Table 4 again presents the level of education completed, cross-tabulated by the variables *spouse or de facto partner* and *gender*. Among partnered men, those without university-level education exceed those with university-level studies by 10 percentage points. Among women, however, this difference is negligible – young partnered women are almost equally split between those with and without university education.

Table 4  
*Level of education completed*

Spouse or de facto partner	Gender		Frequency	Percentage
No	Male	Non-university-level education	801	50.4
		University-level education	788	49.6
		Total	1,589	100.0
	Female	Non-university-level education	469	35.1
		University-level education	867	64.9
		Total	1,336	100.0
Yes	Male	Non-university-level education	329	55.6
		University-level education	263	44.4
		Total	592	100.0
	Female	Non-university-level education	443	49.7
		University-level education	449	50.3
		Total	892	100.0

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

Given the demographic weight, it is unsurprising that there are more young Spaniards living as a couple than foreign nationals. However, Table 5 provides comparative data between the two groups. Among Spanish nationals aged 25 to 34 included in the study, 29.5% live as a couple, compared with 50.6% of foreign nationals in the same age group.

Table 5  
*Spouse or de facto partner, by nationality*

Nationality		Frequency	Percentage
Spanish	No	2,497	70.5
	Yes	1,046	29.5
	Total	3,543	100.0
Foreign	No	428	49.4
	Yes	438	50.6
	Total	866	100.0

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

Table 6 presents the frequency distribution of the variable *economic activity status* as defined by the respondent, segmented by gender and partnership status. Among those not living as a couple, there is virtually no difference by gender: around 65% are economically active and 35% inactive. However, among those living as a couple, the gender gap is more pronounced: 84.8% of partnered men are active, compared with 70.6% of partnered women. Beyond gender differences, these data suggest that employment is a factor that increases the likelihood of living as a couple.

**Table 6**

*Economic activity status as defined by the respondent*

Spouse or de facto partner	Gender		Frequency	Percentage
No	Male	Active	1,039	65.4
		Not active	550	34.6
		Total	1,589	100.0
	Female	Active	859	64.3
		Not active	477	35.7
		Total	1,336	100.0
Yes	Male	Active	502	84.8
		Not active	90	15.2
		Total	592	100.0
	Female	Active	630	70.6
		Not active	262	29.4
		Total	892	100.0

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

Table 7 presents the variable *net monetary income* among young people aged 25 to 34, comparing those who live as a couple with those who do not. The data show that the percentage of individuals with an annual income below €14,000 is significantly higher than the percentage earning more than €14,000, both among those who live as a couple and those who do not. However, among those living as a couple, the proportion of individuals earning above €14,000 is 10 percentage points higher than among those not in a couple. Pending the results of the logistic regression analysis, it can be hypothesised that higher income increases the likelihood of living as a couple.

**Table 7**

*Net annual monetary income in previous year (grouped)*

Spouse or de facto partner		Frequency	Percentage
No	Up to €14,000	2,052	70.2
	Over €14,000	873	29.8
	Total	2,925	100.0
Yes	Up to €14,000	911	61.4
	Over €14,000	573	38.6
	Total	1,484	100.0

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

## 4.2. Inferential analysis

This section presents the results of the binary logistic regression analysis. It provides technical details regarding the model's construction, statistical robustness and findings. It is important to note that causal relationships in the social sciences are complex and that many factors potentially influencing young people's decisions to live as a couple are not included in this model. Nonetheless, there is scope to expand research on couple formation among young people by developing new research models that incorporate additional variables. The findings presented here serve as a valid and reliable starting point for future studies.

In terms of the relative importance of the covariates, the variable *age* obtains the highest Rao's score test value (661.605), while *educational attainment* has the lowest (29.304). All variables are statistically significant and may therefore be included in the model.

The null model is defined as the one with the highest deviance and, consequently, represents the least effective model. Deviance reflects the discrepancy between observed and predicted values. The null model is obtained by excluding all factors that may affect the outcome or raw classification and including only a constant, which reflects the odds of being in a couple.

With the null model, 66.3% of the sample is correctly classified. According to this model, those in a couple represent 50.7% of those not in a couple. The model yields a deviance of 5,632.443. When the covariates *gender*, *age (centred at 29 years)*, *educational attainment*, *nationality*, *economic activity status* and *income* are introduced, the deviance is reduced to 4,597.702. This implies that the inclusion of these covariates reduces deviance by 1,034.741 points (5,632.443 – 4,597.702), explaining 29% of the variability in the dependent variable (*living as a couple*).

The Hosmer–Lemeshow statistic is used to test the null hypothesis that the model's predicted frequencies closely match the observed ones. Since the null hypothesis is rejected, we conclude that the predicted and observed frequencies differ significantly (sig. < 0.05). The proposed model correctly classifies 72.6% of the sample, compared to 66.3% under the null model.

The logistic regression model is expressed as follows:

$$\text{logit}(\text{couple} = 1) = \beta_0 + \beta_1 (\text{Gender}) + \beta_2 (\text{Age}) + \beta_3 (\text{Educational attainment}) + \beta_4 (\text{Nationality}) + \beta_5 (\text{Economic activity}) + \beta_6 (\text{Income})$$



**Table 8**  
*Binary logistic regression*

	B	Standard error	Wald	df	Sig.	Exp(B)
Gender (recoded)	0.686	0.074	85.463	1	0.000	1.986
Age (centred at 29 years)	0.305	0.014	488.882	1	0.000	1.357
Educational attainment (recoded)	-0.447	0.078	33.128	1	0.000	0.639
Nationality (recoded)	0.959	0.090	113.768	1	0.000	2.608
Economic activity (recoded)	-0.816	0.095	73.340	1	0.000	0.442
Income (recoded)	0.222	0.083	7.194	1	0.007	1.249
Constant	-1.234	0.083	221.334	1	0.000	0.291

Source: self-produced based on ECV (Living Conditions Survey) 2022 data.

All coefficients are statistically significant (sig. < 0.05). The sign of each coefficient indicates the direction of the relationship between the dependent and independent variable. A positive sign suggests that as the value of the independent variable increases, the probability of the dependent variable also increases; a negative sign suggests the opposite.

$\beta_0 = -1.234$ : This is the model's prediction on the logit scale when all covariates are set to 0. In this case, it refers to a 29-year-old man with lower secondary education or less, of Spanish nationality, economically active and with an income of €14,000 or less. For this profile, the odds of living as a couple are 29.1% of the odds of not living as a couple. The negative sign indicates that it is more likely not to live as a couple (0) than to live as a couple (1).

$\beta_1 = 0.686$ : This indicates that women are more likely than men to live as a couple. Its exponential value shows that the odds of living as a couple are 1.986 times higher for women than for men.

$\beta_2 = 0.305$ : This suggests that the probability of living as a couple increases with age. Its exponential value shows that the odds of living as a couple increase by a factor of 1.357 for each additional year of age.

$\beta_3 = -0.447$ : This suggests that higher levels of education are associated with a lower probability of living as a couple. Its exponential value shows that the odds of living as a couple decrease by 63.9% as education level increases.

$\beta_4 = 0.959$ : This indicates that the probability of living as a couple is higher among foreigners than among Spanish nationals. Its exponential value shows that the odds of living as a couple are 2.608 times higher for foreigners than for Spaniards.

$\beta_5 = -0.816$ : This indicates that not being economically active decreases the probability of living as a couple. Its exponential value shows that the odds decrease by 44.2%.

$\beta_6 = 0.222$ : This suggests that the probability of living as a couple increases with income. Specifically, having an income over €14,000 increases the odds of living as a couple by a factor of 1.249 compared to those earning €14,000 or less.

Linear predictions are obtained by assigning values to the various covariates. By computing all possible value combinations, we can calculate the *logit* of living as a couple in each case. The combination with the lowest probability is defined as:

$$\text{logit}(\text{couple} = 1) = \beta_0 + \beta_1(0) + \beta_2(-4) + \beta_3(1) + \beta_4(0) + \beta_5(1) + \beta_6(0) = -3.72$$

The associated probability is very low, with a value of 0.024. This corresponds to a 25-year-old man with university education, Spanish nationality, not economically active and an income of €14,000 or less.

The combination with the highest probability is defined as:

$$\text{logit}(\text{couple} = 1) = \beta_0 + \beta_1(1) + \beta_2(5) + \beta_3(0) + \beta_4(1) + \beta_5(0) + \beta_6(1) = 2.158$$

The associated probability is very high, with a value of 0.896 (89.6%). This corresponds to a 34-year-old woman with only primary education, who is not Spanish, is economically active and has an income above €14,000.

This predictive model for living as a couple includes the following dichotomous or dichotomised covariates: *gender*, *educational attainment*, *nationality*, *economic activity* and *income*, along with *age* centred at 29 years. All covariates have a statistically significant effect on the prediction, allowing 72.6% of cases to be correctly classified.

According to this model, the profile least likely to live as a couple is that of a 25-year-old man with university education, of Spanish nationality, not economically active and with an income of €14,000 or less, while the profile most likely to live as a couple is that of a 34-year-old woman with primary education, not of Spanish nationality, economically active and earning more than €14,000.

This study did not take into account potential interactions between the different covariates.

## 5. Conclusions and discussion

This study examined how certain socio-demographic variables influence the decision of young people aged 25 to 34 to live as a couple. This age range was selected because cohabitation is relatively uncommon below the age of 25, and most young people have completed their formal education by the age of 25. One of the findings confirms that women tend to leave the parental home and form

partnerships earlier than men, as noted in previous studies (Mitchell *et al.*, 2017). However, the average age gap between men and women living as a couple is surprisingly small – just 0.4 years. Although this was not a central focus of the study, it may point to a convergence in traditional gender roles, potentially affecting decisions regarding when to move out and start a family. Furthermore, more than half of the young people in the sample had completed university education. Here, notable gender differences emerge: while men without university qualifications are more likely to live as a couple, no significant difference is found among women based on educational attainment. In other words, among young women, the proportion living as a couple is similar regardless of whether or not they have a university degree. Another relevant factor is nationality. A significantly greater proportion of young foreigners live as a couple compared to their Spanish counterparts. This phenomenon may be explained by cultural and economic factors that encourage earlier partnership formation among young migrants – a finding consistent with that reported by Fuster *et al.* (2024). The analysis also reveals that being economically active increases the likelihood of living as a couple, particularly among men. In addition, those with annual incomes above €14,000 are more likely to cohabit. These findings are consistent with those reported by Ballesteros *et al.* (2012), Colom and Molés (2016) and Moreno (2012).

To further investigate these results, a binary logistic regression model was applied, confirming and quantifying the observed relationships. The model shows that all variables considered – *gender, educational attainment, nationality, economic activity and income* – significantly influence the decision to live as a couple. Notably, the model indicates that women are nearly twice as likely as men to live as a couple. It also confirms that the probability of cohabiting increases with age and that having a university education considerably reduces that probability. Finally, the regression model identifies the profile least likely to live as a couple as a 25-year-old man with university education, of Spanish nationality, not economically active and with low income. By contrast, the profile most likely to live as a couple is that of a 34-year-old woman with primary education, not of Spanish nationality, who is economically active and has higher income.

In summary, the decision to live as a couple is clearly linked to a range of socio-demographic and economic factors. The findings suggest that labour market integration and financial stability are key enablers of this transition to adult life. Given that having children generally occurs within the framework of a stable partnership, it is essential to continue investigating the motivations behind such decisions in order to support pathways to adulthood and potentially increase birth rates in a context where these remain below replacement level.

Some important limitations of this study should be acknowledged. First, it is a cross-sectional analysis based solely on 2022 data. Future research is needed to track how these findings evolve over time from a longitudinal perspective. In addition, the use of secondary data restricts the analysis to available variables and those support-

ed by the existing literature. To enrich the study, it would be useful to explore other datasets offering additional variables of interest and to consider conducting qualitative studies that provide a more holistic understanding of processes such as couple formation, cohabitation and parenthood.

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## Notes

1 <https://www.ine.es/jaxiT3/Datos.htm?t=1410>

2 [https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736177003&menu=ultiDatos&idp=1254735573002](https://ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736177003&menu=ultiDatos&idp=1254735573002)

3 [https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\\_C&cid=1254736176807&menu=resultados&secc=1254736195153&idp=1254735976608#\\_tabs-1254736195153](https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736176807&menu=resultados&secc=1254736195153&idp=1254735976608#_tabs-1254736195153)

4 It should be noted that the concept of “economically active” used in this study does not include the unemployed. In official employment registers and the Labour Force Survey (Encuesta de Población Activa – EPA), individuals who are unemployed but seeking work are classified as active. However, in this study, “active” refers only to those engaged in economic activity. The unemployed are included under “not active”.

5 [https://www.ine.es/ss/Satellite?L=es\\_ES&c=INESeccion\\_C&cid=1259925432454&p=%5C&pagename=ProductosYServicios%2FPYSLayout&param1=PYSDetalle&param3=1259924822888#:~:text=Renta%20media%20por%20unidad%20de%20consumo%20seg%C3%BAn%20edad&text=en%20los%20hombres,El%20valor%20m%C3%A1s%20alto%20corresponde%20al%20intervalo%20de%20edad%20de,44%20a%C3%B1os%20\(18.992%20euros\).](https://www.ine.es/ss/Satellite?L=es_ES&c=INESeccion_C&cid=1259925432454&p=%5C&pagename=ProductosYServicios%2FPYSLayout&param1=PYSDetalle&param3=1259924822888#:~:text=Renta%20media%20por%20unidad%20de%20consumo%20seg%C3%BAn%20edad&text=en%20los%20hombres,El%20valor%20m%C3%A1s%20alto%20corresponde%20al%20intervalo%20de%20edad%20de,44%20a%C3%B1os%20(18.992%20euros).)



## F. Javier Sánchez Galán

Tenured lecturer in the Department of Sociology and Social Work at the University of Valladolid. He holds a PhD in Economics from the University of Valladolid, a Bachelor's Degree in Political Science and Sociology, and a Master's Degree in Social Problems from UNED. In addition to his post at the University of Valladolid, he serves as a tutor at the UNED Associated Centre in Segovia. He has extensive teaching experience in undergraduate and master's programmes related to sociology, social work and criminology. His research has focused on youth, inequality and social change, employing innovative methods such as the entropy index, and more recently on social responsibility and ICTs. He has complemented his academic profile with recent training in artificial intelligence and corporate social responsibility.

## Noemí García Sanjuán

International University of La Rioja (UNIR), Faculty of Education. Director of International Academic Development. She holds a PhD in social sciences and a master's degree in family research. She also holds a diploma in social work, a degree in sociology and a degree in psychology, with postgraduate training in family mediation, systemic interventions, and child and adolescent psychotherapy. She carries out her academic work at the Pontifical University of Comillas and the Cardenal Cisneros University Centre (affiliated with the University of Alcalá), where she holds positions as a researcher and lecturer in various programmes. At UNIR, she has served as director of the Master's Degree in Conflict Prevention and Mediation in Educational Settings and is currently Director of International Academic Development at the Faculty of Education. Her research focuses on adoption, intellectual disability and peer violence.

## Manuel Monroy Vega

Adjunct lecturer in the Methodology Department at the Autonomous University of Madrid (UAM). He holds a degree in geodesy and cartography and a PhD in Clinical and Health Psychology from UAM. He has extensive training in methodology, including a Master's Degree in Methodology from UAM and a Master's in Organisation, Operations and Work Methods from UDIMA. His research has been conducted in collaboration with the Association for the Fight Against Kidney Diseases (ALCER), Pfizer Spain and the Down Syndrome Foundation of Madrid.



**ARTICLES/ARTÍCULOS**

# Energy Transition in Valle del Almanzora: Environmental Impacts and Rural Development

Transición energética en el Valle del Almanzora: impactos ambientales y desarrollo rural

**José Carlos Hernández-Gutiérrez**

University of Granada, Spain  
[jchernandez@ugr.es](mailto:jchernandez@ugr.es)

**Guillermo López-Rodríguez**

University of Granada, Spain  
[guillermolopez@ugr.es](mailto:guillermolopez@ugr.es)

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## ABSTRACT

The energy transition constitutes a complex process aimed at gradually replacing fossil fuels with renewable energy sources. Despite the global and geopolitical environmental advantages they offer thanks to their sustainability and potential for energy self-sufficiency, many also generate significant impacts at the local level. This study examines the effects of the installation of photovoltaic and wind energy production facilities on the inhabitants of Valle del Almanzora. The findings indicate positive economic outcomes at both individual and community levels, alongside benefits in combating rural depopulation. At the same time, the research identifies externalities associated with land use, particularly concerning agricultural activity and local ecosystems. The findings contribute to the development of recommendations for the improvement of public policy related to sustainable energy production.

**KEYWORDS:** energy transition; land use; conflict; Andalusia; renewable energies.

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## RESUMEN

La transición energética es un proceso complejo cuyo objetivo es la sustitución progresiva de energías fósiles por fuentes renovables. A pesar de sus beneficios medioambientales globales y geopolíticos por su sostenibilidad y autosuficiencia, muchas de ellas tienen efectos a nivel local. Esta investigación analiza las consecuencias para las poblaciones afectadas por la instalación de plantas de producción solar fotovoltaica y eólica en la comarca del Valle del Almanzora. Los resultados reflejan impactos económicos positivos a nivel individual y colectivo, así como beneficios para combatir la despoblación rural. Al mismo tiempo, presenta externalidades respecto a los usos del suelo en relación con la producción agrícola y los ecosistemas locales. El análisis elaborado permite generar recomendaciones de mejora para políticas públicas relativas a la producción energética sostenible.

**PALABRAS CLAVE:** transición energética; uso del suelo; conflicto; Andalucía; energías renovables.

## 1. Introduction<sup>1</sup>

Climate change and the instrumentalisation of energy for geopolitical purposes have underscored the need for an additional supply of non-renewable sources (Varela, 2024). The energy transition is a complex, long-term process involving a wide range of public and private actors (Liñán-Chacón, 2024). In this context, Andalusia has advanced a transition strategy that prioritises renewable energy sources and promotes energy-saving and efficiency policies aligned with objectives set at both national and European levels (Díaz-Cuevas *et al.*, 2023a). One tenth of Andalusia's territory possesses high potential for the development of wind energy infrastructure (Barral *et al.*, 2023). Combined with the rapid expansion of photovoltaic installations, this has produced significant local-level impacts.

While this transformation marks a critical step towards a more sustainable energy system and reduced reliance on fossil fuels, its success is highly contingent upon public acceptance (González and Estévez, 2005). The growth of the renewable energy sector has altered land-use patterns and reshaped national energy landscapes, giving rise to numerous conflicts among developers, policymakers and local communities (Calvert and Mabee, 2015; Frantál and Kunc, 2011; Jensen *et al.*, 2018; Van der Horst and Vermeylen, 2012). Such conflicts often originate from diverging interests and the expectations generated prior to the initiation of projects (Liñán-Chacón, 2024). The proliferation of renewable energy installations has enabled the development of analyses addressing the challenges arising from using land for the genera-

tion of renewable energy (Díaz-Cuevas *et al.*, 2016, 2023b; Díaz-Pacheco *et al.*, 2018; Barral *et al.*, 2023).

This study contributes to the existing body of literature on land use implications in the context of renewable energy production. It presents an opportunity to examine how decisions made at the macro-geopolitical level produce consequences at the micro-local scale. What are the local-level effects of the global energy transition? To address this question, the research is structured around three specific objectives: (1) to assess the environmental impacts of the energy transition in Andalusia, (2) to identify its effects on rural development and (3) to offer recommendations for the improvement of public policies relating to sustainability and the energy transition.

In response to the need for primary data, this research adopts a qualitative methodology to address the stated objectives. Eight semi-structured interviews were conducted with Andalusian parliamentarians and local stakeholders from Valle del Almanzora, one of the regions with the highest concentration of renewable energy production in Andalusia. The study is grounded in a conceptual framework focused on the local-level effects of the energy transition, with particular attention to land-use conflicts, the determinants of public acceptance and resistance, and the regulatory context. The analysis explores the economic, ecological and social impacts on municipalities. The conclusions outline the principal limitations of the study and identify key academic gaps, suggesting avenues for future research on the energy transition within an increasingly globalised context.

## 2. Effects of the energy transition on the local environment

The energy transition aims to progressively replace fossil fuel sources with more environmentally sustainable forms of energy production that are able to guarantee greater levels of energy independence (González, 2023). This process is rooted in the commitments made as part of the 2015 Paris Climate Agreement (COP21), which emphasised the urgent need to reduce greenhouse gas emissions in order to limit global warming (Mielgo, 2018).

In Spain, the expansion of renewable energy production has been driven by a continuously evolving regulatory framework. Royal Decree-Law 15/2018 marked a key moment by promoting the energy transition and consumer protection. This was followed by Royal Decree-Law 23/2020, which introduced measures for economic recovery, and Law 7/2021, which established the core principles guiding the transition. More recently, Royal Decree-Law 6/2022 introduced expedited procedures for environmental assessment, including the application of positive administrative silence to accelerate project approvals (Terrón-Santos, 2024). Finally, in response to the energy crisis triggered by the war in Ukraine, further provisions were introduced under

Royal Decree–Law 5/2023, while environmental zoning tools have been developed to support the deployment of wind and photovoltaic infrastructure throughout the country (Spanish Ministry for Ecological Transition and the Demographic Challenge [MITECO], 2023).

Overall, society recognises the role of renewable energy in addressing challenges such as climate change and energy security (Kontogianni *et al.*, 2014; Ellis *et al.*, 2007). However, resistance tends to increase when projects are sited near residential areas – a phenomenon commonly referred to as “Not In My Back Yard” (NIMBY). Such objections typically focus on the visual impact of wind turbines and solar farms, as well as perceptions that economic benefits disproportionately favour external investors at the expense of local communities (Barral *et al.*, 2023; Pasqualetti, 2011; González and Estévez, 2005). Nonetheless, public acceptance is widely acknowledged as a crucial factor in the success of renewable energy initiatives; without local support, projects frequently encounter delays and social conflict (González and Estévez, 2005).

Unlike fossil fuels, renewable energy sources require significantly larger land areas due to their lower energy densities (Liñán-Chacón, 2024; Van Zalk and Behrens, 2018). In addition, the intermittency of renewable generation, combined with the need for larger infrastructure, contributes to an expanded territorial footprint (Capellán-Pérez *et al.*, 2019; Sánchez-Contreras, 2024). These conditions result in a variety of impacts: visual impacts, through the transformation of the landscape by wind turbines and photovoltaic installations (Frolova *et al.*, 2015; Liñán-Chacón, 2024); impacts on biodiversity, including the loss of habitats and species in affected areas (Haines-Young, 2009); soil and water impacts, such as increased risks of compaction, erosion and disruption of hydrological regimes, with potential increases in flooding (Sterling *et al.*, 2013; Bajocco *et al.*, 2012); and heritage impacts, through the disturbance of archaeological and cultural sites (Muñoz-Campillo, 2024).

In Spain, many renewable energy facilities are located on agricultural and livestock land, resulting in altered land-use patterns and market dynamics where landowners often opt to lease or sell their property for such projects (Terrón-Santos, 2024). Social conflicts associated with renewable energy developments typically arise from tensions among stakeholders with divergent interests, varying motivations and contested territorial claims (Warren and McFadyen, 2010; Von der Dunk *et al.*, 2011). These tensions may emerge both during the planning phase and after project commissioning, and exhibit similar patterns in both the wind and photovoltaic sectors (Ávila, 2018; Frantál *et al.*, 2023; Liñán-Chacón, 2024). Conflicts are frequently driven by differing expectations between local stakeholders and external investors, perceptions of injustice due to unequal distribution of benefits, lack of transparency (Terrón-Santos, 2024), and unforeseen environmental, landscape or administrative impacts (Liñán-Chacón, 2024). Nevertheless, despite their adverse effects on social cohesion, conflicts also expose systemic shortcomings and can serve as a form of political participation (Cuppen, 2018).

The literature indicates that the equitable and transparent distribution of economic benefits, coupled with local participation, fosters greater acceptance and reduces conflict (Liñán-Chacón and Frolova, 2024; Munday *et al.*, 2011). In particular, projects that involve citizen engagement in decision-making, ensure direct benefits to municipalities and maintain compatibility with traditional land uses in the primary sector tend to be more successful. Conversely, the absence of these elements – often due to a regulatory framework focused primarily on quantitative incentives – has sidelined qualitative considerations such as environmental protection and energy democracy, understood as inclusive power relations and ownership models (Frolova *et al.*, 2015; Szulecki, 2018). Moreover, the urgency to accelerate the energy transition for climate and security reasons has at times resulted in the exclusion of local communities from the decision-making process (Devine-Wright, 2014).

### 3. Qualitative approaches to the study of the global-local dynamics

This research establishes a connection between the macro and micro scales of the energy transition. By conducting an analytical case study bounded by geographical and temporal space (Szmolka and De Cueto, 2011), the effects of the global energy transition on local policies can be identified. Given Andalusia's significant potential for renewable energy production, the Valle del Almanzora region was selected as the case study site to examine the localised effects of the energy transition. This choice was motivated by the presence of multiple renewable energy sources in the area, including wind and solar photovoltaic installations, alongside a well-established history of renewable energy production spanning the last two decades.

The literature review revealed significant information gaps concerning the local-level impacts of the energy transition, prompting a qualitative exploratory study focused on the generation and analysis of primary data. To this end, eight semi-structured interviews were conducted with key stakeholders engaged in various aspects of the energy transition. The sample includes two Andalusian parliamentarians with experience in sustainable development (P1 and P2), who provide insights into the regional implications of energy transition policies on energy production. Additionally, six interviews were conducted with local stakeholders in Valle del Almanzora, offering perspectives on the energy transition's effects at the local level. The data collected is rich and diverse, encompassing the perspectives of two mayors (I2 and I6), two landowners hosting wind turbines (I3 and I4), a local entrepreneur (I1) and a rural technician (I5).

The interviews were conducted in two distinct phases. Initially, the Andalusian parliamentarians were contacted in October 2024, with interviews carried out via telephone and in writing. Subsequently, interviews with local stakeholders in Valle del Almanzora took place in December 2024, predominantly through face-to-face meetings (five interviews) and one telephone interview.

The average duration of the interviews was approximately 30 minutes, with face-to-face sessions recorded for subsequent analysis. At the local level, participants demonstrated a keen interest in contributing to the research, providing valuable information and facilitating contact with additional stakeholders. Local contacts were recruited through non-probabilistic sampling based on purposive criteria, employing convenience and snowball sampling techniques.

The data analysis was conducted using grounded theory, a method previously applied to investigate poorly understood phenomena (López-Rodríguez, 2022), which allows the exploration of key themes grounded in the perceptions of the participants (Richardson and Kramer, 2006). By examining participants’ personal perspectives (Strauss and Corbin, 2002; Franzosi, 1998), analytical categories were developed by integrating those identified in the literature with subcategories emerging from the interviews (Lieblich *et al.*, 1998). The literature review highlighted several key elements, including the effects on landscape (Langer and Wooliscroft, 2018; Krauss *et al.*, 2011), impacts on fauna and flora (Gutiérrez and Herrera, 2023), proximity to inhabited areas (Liñán-Chacón, 2024) and administrative challenges (*ibid.*). The research is centred on examining the local effects of the energy transition, which constitutes the study’s primary category. Based on the literature, two main categories have been identified to facilitate analysis: the environmental impacts of these policies and their effects on rural development. By analysing these key elements, the study not only identifies the principal effects but also formulates recommendations to enhance public policy.

**Table 1**  
*Research strategy*

Central category	Main categories	Theoretical categories	Subcategories
Local effects of the energy transition	Environmental impact	Pollution	Noise Visual
		Ecosystem alteration	Migratory birds Local wildlife
	Rural development	Land uses	Rainfed crops Waste land Hunting land
		Local economy	Public revenue Individual income
		Rural depopulation	Service provision Population retention

Source: own research (2024).



## 4. Effects of the energy transition on the local environment in Andalusia

The transition to renewable energy sources is a global process that has been unfolding across various regions since the late 20th century (FCDS, 2023).<sup>a</sup> In recent years, the production of renewable energy has grown significantly, influenced by targets set by the European Union, which aims to achieve a 40% share of renewable energy by 2030. Spain's commitment to this transition is reflected in its Strategic Energy and Climate Framework, the 2030 Integrated National Energy and Climate Plan and the Long-Term Decarbonisation Strategy 2050 (Terrón-Santos, 2024). Beyond environmental imperatives, the invasion of Ukraine has reinforced the urgency of diversifying energy sources and increasing energy savings and renewable generation (Muñoz-Campillo, 2024).

Driven by both environmental and strategic motivations, this transformation involves a fundamental shift in energy production and consumption patterns, with direct implications for decision-making at the local level (Bielsa *et al.*, 2024). At the regional political level, the energy transition is viewed as a shift from fossil fuels to renewable sources (P1), with the aim of promoting more responsible energy consumption that enhances efficiency and reduces the carbon footprint (P2). While the transition is seen as beneficial to the productive model, public services and household economies (P2), it can also result in negative externalities, such as visual pollution and the conversion of productive agricultural land (P1).

In an increasingly interconnected world, global drivers are producing effects on a regional and autonomous community level, generating negative outcomes that may trigger social tensions related to land use. As previously discussed, the spatial demands of renewable energy infrastructures have led to the widespread use of rural areas for the location of wind and photovoltaic installations (Frolova *et al.*, 2019). Achieving the proposed renewable energy targets thus entails trade-offs for rural territories, necessitating changes in land use that affect local populations and current economic structures (Terrón-Santos, 2024). Some scholars argue that, in certain cases, renewable energy production may provoke conflict comparable to that associated with fossil fuel extraction, leading to social contestation (Sánchez-Contreras, 2024; Temper *et al.*, 2020).

Nevertheless, despite the potential challenges of renewable energy production in rural contexts, it can also generate positive economic and social impacts. The selected case study illustrates the diverse consequences that the energy transition has had on the Valle del Almanzora region in the last decade. The significance of this case lies in its capacity to shed light on the impacts across multiple municipalities within the area, which is strategically situated between Almería and Granada. The region's connectivity also facilitates the distribution of wind and photovoltaic energy production, with key installations including wind farms in Serón (Carrascal I and II, Cerradilla I and II, and Serón I and II) and Tíjola and photovoltaic pro-

jects in Alcóntar and Caniles. The methodological strategy structures the analysis around two principal areas. The first focuses on environmental impacts, particularly in relation to different forms of pollution and the alteration of ecosystems. The second examines the effects on rural development, including changes in land use, impacts on local economies and the contribution of renewable energy projects to combating rural depopulation.

#### 4.1. Environmental impact

Southern Spain is a region of strategic interest for large-scale renewable energy projects, due to its high energy potential and low population density (Sánchez-Contreras, 2024). However, these megaprojects also entail a range of negative impacts, including effects on the landscape (Langer and Wooliscroft, 2018; Krauss *et al.*, 2011), impacts on fauna and flora (Gutiérrez and Herrera, 2023), proximity to inhabited areas (Liñán-Chacón, 2024) and administrative challenges (*ibid.*). The underlying causes of conflict help to identify critical factors, as the absence of a unified framework for environmental land assessment often results in arbitrary planning – one of the main reasons cited for public opposition (Muñoz-Campillo, 2024).

##### 4.1.1. Noise and visual pollution

The analysis reveals that the primary sources of conflict associated with wind energy production relate to its impact on the landscape, the scale of the installations and additional concerns such as adverse effects on local tourism and proximity to inhabited areas (Liñán-Chacón, 2024). Other studies have similarly found that perceptions of these issues are more pronounced in densely populated areas, where visual intrusions and disturbances caused by nearby installations are a heightened source of concern (Frantál *et al.*, 2023). In the case study, the location of wind farms on the boundary between municipalities emerged as a significant source of tension (I1, I2, I5), particularly where residents experienced noise and visual pollution without receiving economic or social benefits in return. Interview data revealed a strong consensus regarding the negative impact of noise (I1, I2, I3, I4, I5, I6) and visual pollution, both in terms of landscape disruption (I2, I3, I4, I5, I6) and night-time light pollution (I5). While interviewees acknowledged that noise pollution was initially problematic, they noted that advancements in technology have significantly reduced acoustic impacts in recent years (I4, I6). Nevertheless, the expansion of wind infrastructure continues to generate considerable visual impact, which remains a recurrent factor in conflicts related to this energy source. Moreover, a lack of communication and coordination between facility operators and local authorities has been identified as a key contributor to local opposition (Liñán-Chacón and Frolova, 2024).

##### 4.1.2. Ecosystem alteration

Research findings also highlight additional concerns related to the impact on ecosystems and local development (Langer and Wooliscroft, 2018), with improved site selection and the implementation of mitigation measures identified as key to reduc-

ing negative outcomes (Liñán-Chacón, 2024; Lüdeke, 2017). The installation of wind turbines affects both residents and the landscape and is associated with significant ecological disruption (I1, I2, I3, I4, I6). According to interviewees, these installations have had a detrimental impact on various species, including eagles and bats (I3), steppe birds (I1) and migratory birds (I6), all of which are disrupted by turbines situated along their flight paths. In addition to these ecological effects, interviewees expressed concern about the potential for environmental contamination in the event of mechanical failure, specifically citing the risk of gear oil leakage from turbines (I1).

## 4.2. Effects on rural development

The energy transition has significant implications for rural development. This study identifies key factors including changes in land use, the economic viability of renewable energy projects and their potential to mitigate rural depopulation. Findings indicate increased productivity on previously uncultivated land, as well as notable differences between the impacts of wind turbines and photovoltaic panels (I3, I5). The installation of renewable energy parks has contributed to the strengthening of municipal finances, indirectly resulting in improved public services, infrastructure and overall quality of life, thus enabling them to better retain their population (I2, I6).

### 4.2.1. Land use

Interviewees reported that many local landowners have opted to lease their land for the installation of wind turbines or solar panels. In most cases, this decision is motivated by higher financial returns, particularly in comparison to traditional farming activities (I1, I2, I3, I4, I6). This is especially the case in areas with rainfed agriculture, where land profitability is low (I2, I3, I5, I6), or on uncultivated land with limited economic value (I4, I5, I6). However, shifting land use from agriculture to energy production raises concerns about potential dependency on foreign agri-food imports, should domestic agricultural output decline (Barral *et al.*, 2023), generating additional situations of reliance for key products. The literature suggests that the most sustainable land-use approach combines agricultural activity with renewable energy systems (*ibid.*; Dinesh and Pearce, 2016). Interviewees also noted important distinctions between the spatial impacts of wind and solar technologies (I3, I5). While wind energy allows for continued agricultural (I3, I5) or hunting use (I4, I5) of the land, photovoltaic installations typically require the land to be temporarily transferred, limiting alternative or simultaneous productive activities (I3, I5). In the selected case, it is evident that the installation of wind turbines often permits the continuation of traditional agricultural practices, as well as unrestricted access to the land by its owners. As one interviewee explains:

I can now access my land, which was left to me by my father. I can go in and put up whatever I want. But then nothing – they take everything away, fence it off and you're not even allowed to enter. That's what they've told me. What we do is remove all the trees [...] fence off the land, install the panels and you can no longer go in there any more. And I don't know... then there's the impact: you no longer see trees, you no longer see life – only solar panels (I3, 2024).

It is important to take these factors into account when assessing the implementation of renewable energy generation facilities. Solar photovoltaic energy has experienced the most significant growth in recent years due to its scalability for both individual and large-scale projects, now accounting for 14.6% of energy production in Spain (Muñoz-Campillo, 2024). However, in Andalusia, this expansion has led to conflicts, with 20% of land-use disputes related to renewable energy projects involving photovoltaic installations (Liñán-Chacón, 2024). At the time of the interviews, several participants were negotiating the installation of solar panels (I1, I3, I4, I5, I6), although one interviewee expressed concerns about the success of the negotiations, citing restricted access to their land and lower profitability compared to wind energy (I3). Another participant reflected on the difficulty of balancing traditional land uses with the integration of renewable energy infrastructure (I2).

#### 4.2.2. Local economies

The installation of wind farms has generated measurable economic benefits at both individual and community levels. The literature broadly reports positive public perceptions, principally because rental payments for turbine sites flow directly to landowners (Barral *et al.*, 2023). In the present case study, owners receive an annual return exceeding 2% of each turbine's output (I3, I4), supplemented by compensation for plots of land situated within the sweep of turbine blades (I1, I3, I4). These revenues, guaranteed for periods of twenty years or more, constitute a stable source of secondary income (I3, I4, I6), often surpassing wages, pensions (I6) or the profits from cereal cultivation (I1, I2), and can even be combined with existing olive or almond production (I3).

The vast majority are located in formerly unproductive hillsides, so for families that have benefited from them, they're an incredible opportunity. They go from having a hill that was literally worthless to having a wind installation that will generate income for them... I don't know exactly how much, but it must be around six to ten thousand euros a year. So, a family is able to considerably increase its income in a good year (I5, 2024).

Wind-energy projects also stimulate local labour markets by demanding a skilled workforce, some of whom are drawn from the surrounding region (I1, I2, I4, I6). At the same time, local economies benefit from high-value building licences (I2, I3, I6) and other renewable-energy levies (I2, I5, I6); one municipality reportedly receives more than €1 million annually from such sources (I2, I3), a significant amount considering it has just 2,000 inhabitants. Finally, local firms that transition to renewable electricity enjoy substantial savings on energy costs (I1).

#### *4.2.3. Combating rural depopulation*

Due to the increase in revenue for local tax offices, the mayors interviewed regard renewable energy as a strategic opportunity to mitigate rural exodus and counter-act depopulation (I2, I6). Both emphasise that the income generated from renewable energy projects not only helps retain the existing population but also has the potential to attract new residents to the area (I2, I6).

Our villages are becoming depopulated because people are not coming, and they are no longer seen as attractive places to live. But if I have renewable energy projects supporting the village, then I can say to someone: “Hey, do you work remotely? Come to my town – we have broadband [...] The town council will give you a €3,000 annual subsidy to help cover your expenses. I’ll offer you an incentive so that you can live here and build a life project.” [...] Here we have the ideal place for people to live. And with the revenue that these renewable energy projects could generate, we could make the village more attractive – through tax incentives or by setting up nurseries where children have space to play (I2, 2024).

The revenues have enabled one municipality to maintain essential education and health services and even to fund new social services, which the municipality provides to the autonomous community as a whole (I6). Simultaneously, these funds have allowed for the repair and improvement of infrastructure such as streets, parks and sanitation systems (I6). This case reflects observations made by other interviewees, who highlighted the opportunities that renewable energy revenues offer to municipalities with similar characteristics (I2, I5, I6). As noted, these revenues not only support the provision of services but also facilitate fiscal improvements (I2), help avoid tax increases (I6) and allow for energy bill offsets (I3), all of which can make rural areas more attractive places for people to live (I2).

## 5. Conclusions and recommendations

The energy transition is a global process with significant geopolitical implications that directly affect local contexts. Although its objectives are universal, the process manifests differently in each local environment where it takes place. Countries such as Spain, which are shifting from fossil fuel-based energy production models to renewable energy sources, must consider both the negative effects and positive impacts associated with this transition. Understanding the externalities arising from the energy transition provides not only economic benefits but also social advantages, improving the quality of life for local populations. This research analyses the effects of the geopolitics of energy at the local level, focusing on the Valle del Almanzora region as a case study. The identified effects are primarily environmental, with special attention given to various types of pollution and their influence on rural development. Public policies play a crucial role in both mitigating the negative impacts associated with the transition and maximising opportunities, particularly in terms of rural development.

The findings of this research align with existing literature, confirming that opposition is generally not directed at renewable energy itself but rather at the construction of facilities near urbanised areas due to their adverse effects on residents' health. Moreover, land-use impacts reveal a greater willingness to approve wind installations over photovoltaic projects, owing to wind power's better output and the possibility of combining it with agricultural activities. The economic profitability of wind energy stands out, especially when compared to rainfed crops, and is even more pronounced in the case of previously unproductive land.

Interviewees highlighted the importance of renewable energy production as a means to mitigate or curb rural depopulation. Revenues generated from taxes related to energy production plants contribute to improving local public services, creating employment and enhancing residents' quality of life. There is consensus among the interviewed mayors regarding the positive role of income from renewable energy production in retaining and attracting population to rural areas. This represents a key finding of the study, marking one of the most significant positive impacts of the energy transition on regions experiencing progressive depopulation.

This research design may be replicated in other case studies to further assess the local impacts of the energy transition. Methodologically, the involvement of interviewees has been essential to both data generation and the interpretation of relevant academic literature. Their contributions offer crucial insights into locally specific dynamics that are embedded within broader global processes. Based on the findings, the following recommendations for public policy improvement are proposed:

- Develop formal mechanisms for citizen participation that include representation from municipalities, landowners, neighbourhood associations and energy project operators. These bodies should meet regularly from the planning phase through to implementation, and hold real decision-making authority.

- Establish a municipal fund to which a fixed percentage of the income generated by each renewable energy plant is allocated. This fund should have a dual purpose: (1) to distribute benefits transparently and equitably, thereby building citizen trust and (2) to retain and attract population through investment in local infrastructure and priority rural development projects.
- Introduce tax incentives for landowners who practise dual land use – maintaining livestock or agricultural activities alongside wind installations – to prevent biodiversity loss.

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## Notes

- 1 The authors thank all participants for their contribution to this research.

### José Carlos Hernández-Gutiérrez

José Carlos holds a bachelor's degree in Political and Administrative Sciences from the University of Granada (2017), a master's degree in Latin American Studies from the University of Salamanca (2019) and a PhD in Social Sciences from the University of Granada (2024). He has undertaken research stays at the Institute of International Relations at the University of São Paulo, Brazil (2018), at El Colegio de México's Centre of International Studies (2021) and at the Centre for Political Studies at the National Autonomous University of Mexico (2022 and 2024). His main line of investigation is the impact of insecurity and violence on electoral behaviour and political violence against women.

### Guillermo López-Rodríguez

A doctor of political science, specialising in military studies (2023), he also holds a bachelor's degree in Political Science (2017) and a master's degree in Public Management (2018). His roles have included a stint as a researcher for the Spanish Army's Training and Doctrine Command (2018), during which time he contributed to drafting the document "Future Terrestrial Operational Environment 2035". In 2020, he completed a research stay at the Faculty of Political Science, Government and International Affairs at Tel Aviv University in Israel. In addition to his research work, he has also taught at the University of Mostar, Bosnia and Herzegovina, and at the Georgian Institute of Public Affairs. His research focuses on military organisations, hybrid threats, future scenarios and unconventional warfare.

**RESEARCH**  
**NOTE**

NOTA DE  
INVESTIGACIÓN



RESEARCH NOTE / NOTA DE INVESTIGACIÓN

# The Digital Competence of Teachers on the Primary Education Degree Course: Instrumental Pilot Study of the “DigCompEduCheck-In” Questionnaire for Its Adaptation to University Students

La competencia digital docente en el Grado de Educación Primaria: estudio piloto instrumental del cuestionario «DigCompEduCheck-In» para su adaptación a alumnos universitarios

**Blanca Berral-Ortiz**

University of Granada, Spain  
[blancaberral@ugr.es](mailto:blancaberral@ugr.es)

**Juan-José Victoria-Maldonado**

University of Granada, Spain  
[jvictoria@ugr.es](mailto:jvictoria@ugr.es)

**Patricia Ayllón-Salas**

University of Granada, Spain  
[patriay@ugr.es](mailto:patriay@ugr.es)

**José-Antonio Martínez-Domingo**

University of Granada, Spain  
[josemd@ugr.es](mailto:josemd@ugr.es)

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## ABSTRACT

The DigCompEduCheck-In questionnaire is a valuable instrument for assessing educators' digital competence, serving as a tool for both self-assessment and professional development. Grounded in the European Digital Competence Framework, it enables educators to evaluate their proficiency across key domains such as digital literacy, communication and technological creativity. Its validity has been supported through implementation in various Spanish universities, confirming its effectiveness. Moreover, the tool encourages a culture of continuous learning, promoting the integration of digital technologies into educational practice. The objective of this pilot study was to develop a measurement scale for evaluating the different areas of digital competence among undergraduate students enrolled on the bachelor's degree in primary education and to analyse the main psychometric properties. This paper details the different phases of the study – conducted with a sample of 204 students – and provides a descriptive analysis of the data collected.

**KEYWORDS:** teacher competence; European digital competence framework; areas of competence; DigCompEdu; pilot study; educational technology.

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## RESUMEN

El cuestionario «DigCompEduCheck-In» es una herramienta esencial para evaluar la competencia digital de los educadores, promoviendo la autoevaluación y el desarrollo profesional. Basado en el Marco europeo para la competencia digital, permite a los educadores medir sus habilidades en áreas como la alfabetización digital, la comunicación y la creatividad tecnológica. Su validez se ha confirmado en diversas universidades de España, lo que respalda su eficacia. Además, fomenta una cultura de aprendizaje continuo, integrando tecnologías digitales en la educación. El objetivo de este estudio piloto fue desarrollar una escala dirigida a medir las diferentes áreas de competencia digital en el alumnado universitario del grado de educación primaria, así como examinar sus principales propiedades psicométricas. La muestra estuvo formada por 204 estudiantes. Se presentan las fases por las que ha pasado este estudio piloto y el análisis descriptivo de los datos recopilados.

**PALABRAS CLAVE:** competencia docente; marco europeo de competencia digital; áreas de la competencia; DigCompEdu; estudio piloto; tecnología educativa.

## 1. Introduction

Digital competence has emerged as an essential skill in many sectors, particularly within the field of education. Recent studies indicate that teachers generally demonstrate digital competence levels ranging from basic to intermediate. Given this context, online teaching methodologies have been recognised as an effective tool for developing and enhancing digital competence (Khademi-Vidra and Bakos, 2024).

While many teachers actively incorporate digital technologies into their daily teaching practice, there remains a clear need for more specific and targeted training programmes that are adapted to the unique characteristics of each subject area and discipline (Kiryakova and Kozhuharova, 2024). This suggests that specialised courses and training could play a critical role in improving teachers' digital competence. Furthermore, the development and consolidation of these skills are influenced by various factors, including gender, level of education and the sector in which professionals work (Nguyen *et al.*, 2024).

The term digital competence is understood as a set of essential skills that enable educators to use digital technologies effectively in education. It encompasses digital literacy, referring to the ability to efficiently manage digital tools; the proficient use of educational software and platforms to enhance the teaching and learning process; and the integration of ICT into pedagogical activities, thereby facilitating the creation of interactive educational experiences. It also involves the capacity to develop e-learning resources that are tailored to students' needs, as well as the skills required to work in virtual environments – facilitating collaboration with other teachers and promoting the exchange of knowledge (Mainz *et al.*, 2024).



Given the growing importance of digital competence, an increasing number of studies focus on evaluating teachers’ digital competence (Cepa-Rodríguez and Murgiondo, 2024; Chen *et al.*, 2024), and, consequently, the “DigCompEdu Check-In” questionnaire is frequently used in digital competence research (Momdjian *et al.*, 2024).

The questionnaire serves as an essential tool for assessing educators’ digital competence, fostering self-reflection and enabling the identification of areas requiring improvement. This instrument, based on the Digital Competence Framework for Educators, has been validated through its use in numerous studies, demonstrating its reliability and effectiveness in different educational contexts.

Some key observations regarding DigCompEdu include:

- The questionnaire allows educators to assess their digital competence across multiple dimensions, including digital literacy, communication and technological creativity (Martín-Párraga *et al.*, 2022).
- It has been used in various settings – such as universities in Spain and Peru – and the large sample sizes confirm its validity (Llorente-Cejudo *et al.*, 2022; Martín-Párraga *et al.*, 2022).
- It encourages continuous self-evaluation, fostering a culture of lifelong learning among educators (Economou *et al.*, 2023).
- It highlights the importance of effectively integrating digital technologies into educational practice, which improves teaching quality and promotes social inclusion (Llorente-Cejudo *et al.*, 2022).

In this context, two key benefits emerge from employing this questionnaire in research on teachers’ digital competence:

- It facilitates personalised training by identifying each educator’s specific strengths and weaknesses in digital competence (Dias-Trindade and Ferreira, 2020; Serrano-Hidalgo and Llorente-Cejudo, 2023).
- Feedback obtained from the questionnaire helps design targeted professional development programmes, which improve educators’ digital fluency over time (Dias-Trindade and Ferreira, 2020).

In recent years, teachers’ digital competence has become an increasingly prominent focus of study, particularly following the COVID-19 pandemic. These skills are essential for effective teaching within an educational landscape that has undergone significant digital transformation. Consequently, higher education institutions have encountered numerous challenges in adapting to this shift, forcing them to rethink their traditional approaches to teaching. Throughout this transition, many institutions have adopted new strategies and pedagogical models centred on online and hybrid learning, aiming to meet the demands of an increasingly digitised educational landscape. These strategies have involved not only the integration of technological

platforms and digital tools, but also the reconfiguration of teaching methodologies to facilitate the active participation of students, regardless of their location or mode of study (Vázquez-Villegas *et al.*, 2024).

Digital competences for teachers encompass the skills and knowledge required to effectively integrate digital technologies into teaching and learning processes. These include the ability to create learning materials, use technology for educational purposes and provide 21st-century students with the skills they need through innovative teaching methods.

These digital competences are grouped into different areas, as defined by the various digital competence frameworks. This study aligns with the European Framework for the Digital Competence of Educators (DigCompEdu), which emphasises the importance of digital skills in teacher education.

DigCompEdu was used by the researchers to measure and evaluate the levels of digital competence among trainee teachers. It provides a detailed structure that covers various areas of digital competence, and forms a crucial part of teacher training, since it helps ensure that educators are prepared to effectively integrate digital technologies into their pedagogical practices, thus improving the quality of the teaching and learning process in an increasingly digitised world (European Commission, 2017).

The objective of this pilot study was to develop a measurement scale for evaluating the different areas of digital competence among undergraduate students enrolled on the bachelor's degree in primary education and to analyse the main psychometric properties.

## 2. Method

### 2.1. Sample

A sample of 204 subjects was selected from three groups of second year students enrolled on the bachelor's degree in primary education at the University of Granada. The mean age of the participants was 19.29 years ( $SD = 1.29$ ), with an age range of 18 to 24 years. The gender distribution was 54 males (26.47%) and 150 females (73.53%).

The sample was selected using a non-probabilistic convenience method (Kalton, 2020), with the sample size determined in accordance with the objectives of the study. Notably, the final sample exceeded the minimum thresholds recommended in various simulation studies for structural models similar to those proposed in this research (Tomarken and Waller, 2005). However, to ensure greater robustness, the minimum required sample size for the structural complexity of the specified model

was calculated ( $n = 148$ ), taking into account the number of observed variables (17) and latent variables (5), the expected effect size (0.10), the associated probability (0.05) and the desired statistical power (0.80) (Soper, 2024).

## 2.2. Instruments

*Socio-demographic and academic data questionnaire.* A self-report comprising four multiple-choice items to collect socio-demographic (age and gender) and academic (degree course and university) information from the participants.

*The “DigCompEdu Check-In” questionnaire was adapted to students on the bachelor’s degree in primary education course.* The instrument contained 17 Likert scale items, with responses ranging from 0 to 4 (0 = No engagement, 1 = Partial knowledge, 2 = Occasional use, 3 = Increasing use, 4 = Systematic and comprehensive use). These items were grouped into five areas of competence: a) Professional engagement – covering competences such as organisational communication, professional collaboration, reflective practice and digital training (four items); b) Digital resources – including competences related to the selection, creation/modification, and administration, exchange and protection of digital resources (three items); c) Digital pedagogy – encompassing competences in teaching, guidance, collaborative learning and self-directed learning (four items); d) Assessment and feedback – focusing on evaluation strategies, analysis of evidence, and feedback and planning (three items); and e) Empowering students – addressing competences related to accessibility and inclusion, differentiation and personalisation, and active student participation (three items). Similarly to the original adaptation (Cabero and Palacios, 2020), this questionnaire aims to assess the strengths and needs or areas of improvement in digital competence among future education professionals. However, it is important to note that the original adaptation (*ibid.*) did not provide details of its main psychometric properties.

*Level of digital competence.* Indicator of participants’ perception of their own digital competence, scored on a six-point scale (A1 = Novice, A2 = Explorer, B1 = Integrator, B2 = Expert, C1 = Leader, C2 = Pioneer).

## 2.3. Design and procedure

This pilot study, approved by the Ethics Committee of the University of Granada (3496/CEIH/2023), has adopted an instrumental methodological design (Ato *et al.*, 2013).

The “DigCompEdu Check-In” questionnaire (Cabero and Palacios, 2020) was adapted to and validated for university students enrolled on the primary education degree programme in line with the quality standards established in the specialised literature (Muñiz and Fonseca-Pedrero, 2019). The first step consisted of requesting authorisation from the authors of the original adaptation of the instrument (Cabero and Palacios, 2020).

In the second step, once authorisation was granted, the items for the different digital competence areas were designed. The five areas of competence included in the instrument were chosen, eliminating the area “promoting the development of students’ digital competence”, as it was not deemed applicable to trainee primary education professionals. Next, the items on the other areas of competence were adapted to trainee primary education professionals, at all times seeking an equivalence with the instrument’s original adaptation (*ibid.*).

In the third phase, two experts in the field assessed the representativeness, relevance, diversity, clarity, simplicity and comprehensibility of the items included in the adaptation made in the second step (Muñiz and Fonseca-Pedrero, 2019). A pilot study of the instrument was also carried out with a small sample of primary education university students ( $n = 6$ ) in order to verify approximately how long was required to complete the questionnaire and to evaluate the suitability of the items’ content and format (*ibid.*).

The fourth and final phase, after obtaining the relevant institutional approvals, a sample of students enrolled on the bachelor’s degree in primary education at the University of Granada (from three different classes) was invited to voluntarily participate in the research. The purpose of the study and the procedures involved were explained to the students, and once they agreed to participate, they signed the relevant agreements and informed consent forms. The instruments were administered to all students during class hours in the reference classes using the computer-assisted web interview technique (Couper and Bosnjak, 2010). This process was carried out by a member of the research team, who first informed the students of the study’s objective, the voluntary nature of their participation and the confidentiality of their responses. Subsequently, the written instructions provided were supplemented with oral explanations from the researcher, and the queries raised by the participants were addressed. The participants completed the instrument within 15 to 20 minutes. Data collection was carried out in October 2023.

## 2.4. Data analysis

Firstly, a descriptive analysis of the collected data was conducted, assessing distribution, linearity, outliers, missing values and influential points (Tabachnick and Fidell, 2019). Next, to examine the theoretical structure of the instrument, a confirmatory factor analysis (CFA) was conducted, using a model with five first-order factors that were correlated with one another. The CFA was estimated using the weighted least squares (WLS) method, and different indices were employed to assess the model’s goodness of fit (Hu and Bentler, 1999; Kline, 2015): a) The Chi-square test ( $\chi^2$ ), which is expected to be non-significant, although due to its sensitivity to sample size, the  $\chi^2$ /degrees of freedom ( $df$ ) ratio can also be considered, with acceptable values below 5; b) the comparative fit index (CFI) and goodness of fit index (GFI), both of which should exceed 0.90

to indicate acceptable fit; and c) the standardised root mean squared residual (SRMR) and the root mean square error of approximation (RMSEA), with acceptable thresholds below 0.08.

Thirdly, to evaluate the reliability of the instrument, internal consistency was calculated using Cronbach's alpha ( $\alpha$ ) and McDonald's omega ( $\omega$ ), with both coefficients expected to exceed 0.70 (Hair *et al.*, 2014).

And finally, to gather evidence of the instrument's external validity, the Spearman's rank correlation coefficient (Spearman's  $r$ ) was used to assess the relationship between the different areas of competence and the level of digital competence. Likewise, after the Kolmogorov–Smirnov test confirmed that the data did not follow a normal distribution, Mann–Whitney  $U$  tests for two independent samples and Kruskal–Wallis  $H$  tests for independent samples were applied to examine differences in the model's areas of competence based on the *gender*, *age* and *level of digital competence* variables. The family-wise error rate resulting from the multiple comparisons problem was controlled using the Bonferroni correction.

Statistical analyses were conducted using STATA v17 (StataCorp, College Station, TX, USA).

### 3. Results

The descriptive statistics for the different instrument items are shown in Table 1. The values of skewness and kurtosis, as well as the Kolmogorov–Smirnov statistic, reveal a univariate non-normal distribution in all items, while Mardia's multivariate skewness (98.32;  $\chi^2 = 3,397.66$ ;  $p < 0.001$ ) and kurtosis (325.74;  $\chi^2 = 414.99$ ;  $p < 0.001$ ) coefficients indicate that the joint distribution of the items does not fit the multivariate normal distribution. This justifies the choice of the WLS estimator for the CFA. No missing values were detected, and outliers identified through Mahalanobis distance were processed using robust estimators. The descriptive analysis of the items revealed mean scores ranging from 1.69 ( $SD = 0.86$ ) for item 4 to 3.60 ( $SD = 0.67$ ) for item 15.

On the other hand, the results of the CFA model, based on five correlated first-order factors, yield relatively adequate goodness-of-fit indices and statistics:  $\chi^2$  (84;  $n = 204$ ) = 207.09;  $p > 0.05$ ;  $\chi^2/df = 2.47$ ; CFI = 0.85; GFI = 0.92; SRMR = 0.08; RMSEA = 0.08 (90% CI = 0.07–0.10). Correlation between the instrument's different areas of competence ranged from -0.14 (empowering students and professional engagement) to 0.53 (empowering students and assessment and feedback) (Table 2).

**Table 1**  
*Instrument descriptive statistics*

Areas of competence / items	M (SD)	SK	KU	K-S
Professional engagement				
1. I systematically use various digital channels to improve communication with my colleagues	2.09 (0.89)	0.08	-0.65	0.88***
2. I use digital technologies to collaborate with my peers both inside and outside faculty classrooms	2.38 (0.84)	1.12	0.02	0.64***
3. I am actively developing my digital competence as a future teacher	2.24 (1.10)	-0.21	-0.53	0.91***
4. I participate in online training courses, such as online workshops, MOOCs and webinars	1.69 (0.86)	0.50	0.74	0.86***
Digital resources				
5. I use various websites and search strategies to find and select a wide range of digital resources	2.00 (0.81)	0.34	-0.60	0.84***
6. I create and modify digital resources to suit my needs as a future teacher	2.12 (0.76)	-0.61	2.31	0.74***
7. I am capable of securely protecting sensitive content such as photographs, videos, files and other works	2.43 (0.99)	0.25	-0.97	0.87***
Digital pedagogy				
8. I carefully consider how, when and why to use digital technologies in the teaching–learning process to ensure their added value is maximised	2.62 (1.08)	-0.03	-1.32	0.85***
9. I consider the supervision of my future students' activities and interactions with ICT in my educational proposals	2.93 (0.86)	-0.55	0.39	0.84***
10. I include ICT as a tool for supporting collaborative learning and knowledge documentation in my educational proposals	3.13 (0.70)	-0.19	-0.98	0.80***
11. I aim to use digital technologies to enable my future students to plan, document and evaluate their own learning, for example, through self-assessment tests, digital portfolios, blogs and forums	3.16 (0.66)	-0.18	-0.71	0.79***
Assessment and feedback In my future work as a teacher, the initial training I am receiving in my undergraduate studies will enable me to:				
12. Propose digital assessment strategies to monitor student progress in my educational proposals	3.12 (0.70)	-0.42	0.01	0.81***
13. Analyse all available data to identify students who require additional support	3.50 (0.68)	-1.30	1.54	0.70***
14. Use digital technologies to provide effective feedback	3.04 (0.67)	-0.34	0.17	0.80***
Empowering students In my future work as a teacher, the initial training I am receiving in my undergraduate studies will enable me to:				
15. Propose digital tasks while considering and addressing potential challenges, such as ensuring equal access to digital devices and resources, compatibility issues and low student levels of digital competence	3.60 (0.67)	-1.73	2.70	0.63***
16. Use digital technologies to provide students with personalised learning opportunities, such as by assigning different digital tasks tailored to individual learning needs, preferences and interests	3.40 (0.70)	-0.84	0.46	0.77***
17. Use digital technologies to actively engage students in the classroom	3.21 (0.66)	-0.24	-0.72	0.78***

N.B.: M: mean; SD: standard deviation; SK: skewness; KU: kurtosis; K-S: Kolmogorov–Smirnov; \*\*\*  $p < 0.001$ .

Regarding the instrument's internal consistency, the results show a Cronbach's alpha ( $\alpha$ ) and McDonald's omega ( $\omega$ ) of 0.75 for the overall scale, with scores ranging from 0.63 in the digital pedagogy area of competence to 0.72 in assessment and feedback (Table 2). On the other hand, results related to the instrument's external validity reveal a consistent pattern of positive correlations between the different areas of competence of the instrument, except in the case of empowering students (Table 2).

**Table 2**  
*Correlations and reliability of the instrument*

Areas of competence	1	2	3	4	5	6
1. Professional engagement	-					
2. Digital resources	0.30**	-				
3. Digital pedagogy	0.31**	0.26**	-			
4. Assessment and feedback	0.18*	0.27**	0.44**	-		
5. Empowering students	-0.14*	0.03	0.25**	0.53**	-	
6. Level of digital competence	0.47**	0.24**	0.28**	0.31**	-0.03	-
M	8.40	6.54	11.84	9.66	10.15	1.87
SD	2.44	1.57	2.19	1.50	1.49	0.75
$\alpha$	0.65	0.64	0.63	0.66	0.67	-
$\omega$	0.67	0.70	0.67	0.72	0.68	-

N.B.: M: mean; SD: standard deviation;  $\alpha$ : Cronbach's alpha;  $\omega$ : McDonald's omega; \*  $p < 0.05$ ; \*\*  $p < 0.001$ .

Finally, the significance level for each of the multiple comparison tests was adjusted using the Bonferroni correction, resulting in 0.01 for the different contrasts (0.05/5). In this regard, the results of the comparisons based on the *gender* variable reveal statistically significant differences in favour of men in the digital resources area of competence ( $U = 3,186.00$ ;  $p < 0.05$ ) and in favour of women in the assessment and feedback ( $U = 3,213.00$ ;  $p < 0.05$ ) and empowering students ( $U = 2,061.00$ ;  $p < 0.001$ ) areas. With respect to the *age* variable, statistically significant differences were observed in favour of older students across all areas of competence, except for empowering students ( $H = 34.00$ ;  $p < 0.001$ ), where the differences were in favour of younger students (Table 3). Similarly, statistically significant differences were observed across all areas of competence measured by the instrument according to participants' level of digital competence, with those reporting higher levels of digital competence achieving the highest scores in all areas (Table 3).

**Table 3**  
*Comparison of the instrument’s areas of competence based on the Gender, Age and Degree Course variables*

Areas of competence	Gender (U)	Age (H)	Level of digital competence (H)
1. Professional engagement	3,501.00	13.18 <sup>*</sup>	47.47 <sup>**</sup>
2. Digital resources	3,186.00 <sup>*</sup>	7.28	31.56 <sup>**</sup>
3. Digital pedagogy	3,397.50	24.76 <sup>**</sup>	20.49 <sup>**</sup>
4. Assessment and feedback	3,213.00 <sup>*</sup>	32.77 <sup>**</sup>	19.38 <sup>**</sup>
5. Empowering students	2,061.00 <sup>**</sup>	34.00 <sup>**</sup>	6.90

N.B.: H = Kruskal–Wallis H test; U = Mann–Whitney U test; <sup>\*</sup>p < 0.05; <sup>\*\*</sup>p < 0.001.

## 4. Discussion and conclusions

The objective of this pilot study was to develop a measurement scale for evaluating the different areas of digital competence among undergraduate students enrolled on the bachelor’s degree in primary education and to analyse the psychometric properties. Therefore, based on the results obtained, the main conclusion of this study is that the instrument demonstrates adequate psychometric quality, with appropriate levels of validity and reliability. It can thus be effectively applied to assess digital competence, consistent with previous research that has employed the DigCompEdu Check-In questionnaire (Momdjian *et al.*, 2024). In this regard, a growing body of literature is dedicated to evaluating digital teaching competence (Cepa-Rodríguez and Murgiondo, 2024; Chen *et al.*, 2024; Nguyen *et al.*, 2024).

However, it is essential to emphasise that digital competence must be systematically integrated into teacher training programmes. As the digitalisation of education advances, the role of teachers must evolve accordingly. For 21st-century educators, innovation and the use of pedagogical and technological resources are fundamental components of good teaching practices. Consequently, university teacher training curricula must be adapted to provide future education professionals with both theoretical foundations and practical experience in digital pedagogy so that they can apply these skills effectively in schools and demonstrate solid levels of digital competence.

Spain is number one in terms of publications on teachers’ digital competence, but further research is needed to explore specific aspects of digital competence and to identify emerging trends that can inform future educational strategies.

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## Blanca Berral-Ortiz

Awarded a PhD in education sciences by the University of Granada, she also holds a bachelor's degree in early childhood education – for which she was given the extraordinary academic achievement award – and a master's degree in research and innovation in curriculum and training. She is currently a post-doctoral researcher in the Department of Didactics and School Organisation at the University of Granada, where her fields of investigation include educational inclusion, digital competence and literacy, as part of her work with the Análisis de la Realidad Educativa (Analysis of Educational Reality, AREA) research group (HUM-672). She is also involved in projects on mobile learning, flipped classrooms and immersive technologies for developing teachers' digital competence.

## Juan-José Victoria-Maldonado

Juan-José graduated with a degree in early childhood education and completed his research training as part of the master's degree in research and innovation in curriculum and training at the University of Granada, where he is now a lecturer. Focusing on the field of teaching and school organisation, he has published work on a number of topics, including the use of active methodologies and how ICT can enhance the teaching–learning process.

## Patricia Ayllón-Salas

A PhD student in educational sciences, she previously graduated in primary education, later specialising with a master's degree in research and innovation in curriculum and training. During this time, she received the Research Initiation Grant and the Collaboration Grant from the Department of Developmental Psychology and Education.

## José-Antonio Martínez-Domingo

José-Antonio is a predoctoral research fellow in training at the University of Granada. With a degree in primary education, specialising in physical education, and a master's degree in research and innovation in curriculum and training, he is currently studying towards a PhD in educational sciences. He is also a member of the AREA research group (HUM-672). His lines of research focus on digital competence, social media, new teaching–learning methodologies, teaching innovation and technological resources.



**DEBATE**

DEBATE



**DEBATE/DISCUSSION:** THE CIRCULAR ECONOMY FROM A LEGAL PERSPECTIVE. THE TAX SYSTEM AND LABOUR REGULATION IN THE CONTEXT OF ENVIRONMENTAL SUSTAINABILITY / LA ECONOMÍA CIRCULAR EN PERSPECTIVA JURÍDICA. SISTEMA TRIBUTARIO Y REGULACIÓN LABORAL ANTE LA SOSTENIBILIDAD AMBIENTAL

## Editorial: Taxation System and Circular Economy: History of an Imperfect Symbiosis

Editorial: Sistema tributario y economía circular: historia de una simbiosis imperfecta

**Yolanda García Calvente**

University of Granada, Spain  
[yolandagcalvente@ugr.es](mailto:yolandagcalvente@ugr.es)

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### ABSTRACT

This article seeks to contextualise the discussion on the circular economy to which the following pages contribute, from a legal perspective. The circular economy, as defined in Spanish Law 7/2022 of 8 April on waste and contaminated soils for a circular economy, is an “economic system in which the value of products, materials and other resources in the economy is maintained for as long as possible, enhancing their efficient use in production and consumption, thereby reducing the environmental impact of their use and minimising waste [...]” The transition from the current linear model to the one described in this legislation is essential, yet it also gives rise to consequences that may affect social sustainability. These must therefore be addressed primarily through two areas of law: the legal framework governing public revenue and expenditure and labour law. It is therefore vital to examine how both legal disciplines contribute to a just transition towards the circular economy.

**KEYWORDS:** financial law; tax system; environmental taxation; environmental sustainability; waste; recycling; tax incentives; circular economy.

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## RESUMEN

Este trabajo tiene como objetivo contextualizar el debate sobre economía circular en perspectiva jurídica del que forman parte estas páginas. La economía circular, tal como la define la Ley 7/2022, de 8 de abril, de residuos y suelos contaminados para una economía circular, es un «sistema económico en el que el valor de los productos, materiales y demás recursos de la economía dura el mayor tiempo posible, potenciando su uso eficiente en la producción y el consumo, reduciendo de este modo el impacto medioambiental de su uso, y reduciendo al mínimo los residuos [...]». La transición del actual modelo lineal al que describe esta norma es imprescindible, pero también genera consecuencias que pueden afectar a la sostenibilidad social y que deben ser abordadas principalmente desde dos ámbitos del derecho: el que regula el ingreso y el gasto y el derecho del trabajo. Por tanto, debatir sobre la forma en la que ambas disciplinas contribuyen a la transición justa a la economía circular es imprescindible.

**KEYWORDS:** derecho financiero; sistema tributario; tributación ambiental; sostenibilidad ambiental; residuos; reciclaje; incentivos tributarios; economía circular.

## 1. Introduction

The links between the taxation system and the circular economy have grown increasingly strong in recent years, with relative success if we assess the effectiveness of tax regulations in achieving the objectives associated with the subject under study. Scientific publications, references in popular science and even legislative initiatives on the matter are easy to find. However, in my view, the prevailing approach exhibits clear shortcomings, which I will endeavour to explain over the following pages. To this end, I consider it necessary to address two issues: first, the historical development of the subject, in order to clarify when and under what conditions the taxation system and the circular economy began to be linked; and second, the strengths and weaknesses of the relationship between the two.

Before proceeding, it is useful to recall that the concept of the circular economy, as is well known, refers to a model of production and consumption based on sharing, renting, reusing, repairing, refurbishing and recycling existing materials and products as many times as possible, in order to create added value. In doing so, product life cycles are extended and waste is reduced to a minimum, so that when a product reaches the end of its life, its materials are retained within the economy wherever possible. This model stands in contrast to the traditional linear economy, which is based primarily on the “take, make, dispose” approach and relies on large quantities of cheap, readily available materials and energy. Tax incentives and the circular economy from a historical perspective.

The use of tax incentives to address issues arising from insufficient environmental protection is not a new phenomenon.<sup>1</sup> On the contrary, its origins date back some time, with more intensive study in Spain beginning in the 1990s. During that dec-



ade, authors such as Carbajo Vasco, Dopazo Fragío, Falcón y Tella, Herrera Molina, Vicente-Arche Domingo, Magadán Díaz, Botella García-Lastra and Autrand began publishing the results of their research into the interactions between environmental policy and taxation.

The latter, arguably the least well known of them all, was, at the time of writing his text, a “technician at the Commission of the European Community”, and devoted a section of his work to the “Rediscovery of the fiscal tool”. In it, he posed the question of why there was “this trend in favour of applying fiscal policy”. And although he himself refers to it as a “rediscovery”, he goes on to acknowledge that “the potential application of economic and fiscal tools in the environmental field is a new feature of current debates”, which is explained:

undoubtedly, by the perception that the effectiveness of regulatory action tends to be stifled by the proliferation and constant amendment of various rules. It is also attributable to the uncertainty surrounding the use of pollution rights. Proponents of taxation argue that it enables action to be taken through price mechanisms: by increasing the cost of polluting products or lowering that of clean alternatives, it would allow behavioural change to be encouraged. It is, therefore, a mode of intervention that is both universal and decentralised, and is regarded as more effective than regulatory approaches.

And although he does not question the effectiveness of taxation, he believes that other avenues in the fight for environmental protection should have been exhausted beforehand: “Let us consider for a moment the significant delays in reducing pollution in the areas of urban transport or waste management, where Europe has yet to make all the progress it is capable of.” It is worth recalling that this was a paper published over thirty years ago, and we can probably agree that much remains to be done, beyond the fiscal sphere.

Borrero Moro also completed his doctoral thesis, *La tributación ambiental en España* (Environmental Taxation in Spain), during the final decade of the twentieth century. In my view, it constitutes an essential point of departure for understanding the development of environmental taxation in the country. In it, he defended the constitutional legitimacy of fiscal measures aimed directly at achieving constitutional objectives by incentivising behaviours more consistent with the idea of justice enshrined in the Constitution. As the author stated:

The duty to contribute is a constitutional instrument founded on the concept of justice that inspires the Spanish Constitution and is directed towards the achievement of material equality. It therefore seeks to realise the goals of justice that give substance to this notion, among which is the protection of the environment (Article 45 of the Spanish Constitution). These goals contribute to shaping the idea of constitutional justice. Consequently, they form part of the concept of justice that informs the duty to contribute, particularly when this duty is directed towards their fulfilment.

Moreover, as Borrero Moro also anticipated, it is possible to “design fiscal measures based on principles arising from constitutional mandates other than the principle of economic capacity”.

Shortly thereafter, Professor Vaquera García defended what was likewise his doctoral thesis, *Problemática tributaria de la protección ambiental* (Tax Issues in Environmental Protection) (1998)<sup>2</sup>, which complements the perspective provided by Borrero Moro. It is particularly valuable not only for the ideas it introduces but also because, when read in conjunction with his more recent monograph, *De la tributación ambiental a las medidas financieras incentivadoras de la economía circular* (From Environmental Taxation to Financial Measures to Promote the Circular Economy), it enables us to trace the evolution of the phenomenon to which this article is dedicated.<sup>3</sup>

Over the following two decades, the body of academic work on environmental taxation continued to grow, although attention gradually shifted from general analyses of the constitutionality and effectiveness of environmentally motivated tax measures to the study of more specific issues. Thus, studies began to emerge on, for example, the taxation of energy, water and waste, and interest also grew in environmental taxation across all levels of government. At the same time, a series of publications began to focus on the link between environmental taxation and specific sectors of activity particularly prone to generating environmental damage, including tourism, housing and transport.

In the past decade, the core of research into the intersection between public revenues and the environment has shifted towards the concept of the circular economy, with particular emphasis on issues relating to waste. In this area, the research teams formed around the projects led by Professor Patón García, Grau Ruiz and myself have made notable contributions, as have several individual researchers.

A bibliometric analysis of this topic points to 2013 and 2014 as the years when references to the circular economy began to appear with increasing frequency. However, in the field of taxation, the starting point is somewhat later, specifically around 2017, with 2019 marking the publication of some of the most significant works on the subject.<sup>4</sup> I refer, for example, to the article by B. García Carretero, “Environmental Waste Taxation in the New Circular Economy Framework”,<sup>5</sup> to S. Sastre’s paper “Fiscal Instruments for the Circular Economy in Spain”<sup>6</sup> and especially to the monograph by Professor M. M. Soto Moya, *Objetivos de desarrollo sostenible y Economía Circular. Desafíos en el ámbito fiscal*<sup>7</sup> (Sustainable Development Goals and the Circular Economy: Challenges in the Fiscal Sphere).

From what has been presented so far – and particularly from a reading of the works cited – several conclusions can be drawn. The first is that there is a clear and growing interest in the circular economy among tax law scholars, building on the engagement with environmental taxation that emerged in the late twentieth century. This is, of course, a consequence of increasing public concern in Spain about environmental degradation, climate change and the search for solutions to the problems arising

from these issues. It also stems, naturally, from the expansion of public policies that address these challenges, and from the fact that scientific policy has prioritised projects in this area.

However – and this is the second conclusion – despite the proliferation of publications whose titles feature terms such as circular economy, environment and waste, along with others such as taxation and fiscal policy, the conclusions that can be drawn in terms of public policy design are not as robust or effective as they ought to be. There are several reasons for this. The first, quite logically, relates to the complexity of the subject matter. The second lies in the insufficient development of a culture of public policy evaluation, which prevents us from having the necessary tools to properly assess the decisions that are translated into regulatory frameworks and which we, as researchers, seek to analyse. A third reason concerns us more directly as a scholarly community: we have reached a point where it appears obligatory to write repeatedly about the most topical subjects – which currently include, in addition to the circular economy, digitalisation and the integration of artificial intelligence into all areas of economic, social and political life – but we do so from an excessively narrow perspective. We assume that the analytical tools which, until recently, enabled progress in the study of taxation remain sufficient – yet they no longer are. Within the academic environment, there coexists a deeply rooted belief that we belong to a fully autonomous discipline, marked by an excessive preoccupation with questions whose understanding demands a cross-disciplinary approach, extensive training and, ultimately, a radical shift in the way we approach the problems we seek to examine in depth.

The third conclusion, a logical consequence of the previous two, is that it is necessary to redirect the course of research and begin offering society not only a coherent theoretical framework but also applied science. By this, I mean that we must not forget that our work is meaningless if it does not serve to advance the search for solutions to the problems and challenges we face. On the basis of this premise, the following section will attempt to outline the lines of research on which, in my view, we should concentrate if we wish our work to contribute to the development of social innovations aimed at social transformation. Let me recall here that social innovations are intentional solutions to social problems which also result in a transformation of society, in the sense given to the term “transformation” by K. Polanyi in *The Great Transformation*.

Before concluding this section, I would like to devote a few lines to the subtitle chosen for this work: “History of an Imperfect Symbiosis”.<sup>8</sup> In biology, and according to the dictionary of the Spanish Royal Academy (RAE), symbiosis is defined as the association of animal or plant individuals of different species, especially when the symbionts derive mutual benefit from living together. Has the discipline concerned with studying public revenue in relation to the environment – and more recently, the circular economy – truly benefited from this association? And conversely? The answer may be inferred from the fact that I have included the adjective “imperfect” in the title. It is evident that both parts of the equation have benefited from one an-

other, but it is equally evident that much remains to be done – and, above all, that one of the two sides (in this case, taxation) has benefited more than the other. By this I do not mean to suggest that those of us who are, or have been, engaged in research in this field have acted dishonestly (at least not in the majority of cases), but rather that, as I have already mentioned – and as I will elaborate further in the next section – taxation has been used by those with the authority to legislate as a kind of cure-all, intended to compensate for the absence of a firm and sustained commitment to environmental protection, sustainable development, economic circularity and so on. Indeed, bold declarations often prevail over substantive commitments, for reasons linked both to fear of the political repercussions of necessarily difficult decisions and to economic considerations.

## 2. Incentives that fail to fulfil their purpose

In 2020, in the foreword to the book *De la tributación ambiental a las medidas financieras incentivadoras de la Economía Circular* (From Environmental Taxation to Financial Measures to Promote the Circular Economy), I referred to the need to:

[...] having had sufficient time since environmental taxation first began to be discussed, reflect on the issue and examine the financial measures incentivising the circular economy in light of how the former have evolved. All the decisions taken have had consequences, and although the concept of the circular economy is presented as the definitive solution to the unsustainability of the linear economic model, it is important to learn from past experience: to retain everything that has proven effective, eliminate what has shown itself to be unfit for purpose and advance the circular economy with a clear awareness of both successes and failures.<sup>9</sup>

More than four years have now passed since that observation, and we have still not made sufficient progress in evaluating public policies related to this issue – although several important initiatives have been undertaken that warrant attention.

At the level of the European Union, in 2018 the Commission adopted its Communication to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on a monitoring framework for the circular economy (COM [2018] 29 final).<sup>10</sup> Five years later, in 2023, the Commission adopted a Communication on a revised monitoring framework for the circular economy (COM [2023] 306 final),<sup>11</sup> which:

[...] presents a revised monitoring framework that captures the circular economy focus areas and the interlinkages between circularity, climate neutrality and the zero pollution ambition. This revised monitoring framework reflects the priorities of the circular economy in the context of the European Green Deal, the 8th Environment Action Programme, the 2030 Agenda for Sustainable Development and the EU's objectives on supply security and resilience.

As stated in the document, the aim of the new monitoring framework is to offer a comprehensive overview by measuring the direct and indirect benefits of increased circularity. To that end, eleven indicators are used, grouped under the following five dimensions:

1. production and consumption,
2. waste management,
3. secondary raw materials,
4. competitiveness and innovation, and
5. global sustainability and resilience.

The Communication introduces several new indicators, among which the following are particularly noteworthy:

- Material footprint: measures the overall use of materials and reflects the amount of materials embedded in global consumption, including imported goods.
- Resource productivity: measures the amount of GDP from materials use and demonstrates the efficiency in using materials in the production of goods and services.
- Consumption footprint: compares consumption to the planetary boundaries for 16 impact categories based on a life-cycle assessment and according to the five main areas of consumption (food, mobility, housing, households goods and appliances).
- GHG emissions from production activities: measures the GHG emissions produced by production sectors (therefore excluding emissions from households) and reflects the contribution of the circular economy to climate neutrality.
- Material dependency: measures the share of imported materials on overall material use, describing how much the EU depends on imports of materials and reflects the contribution of the circular economy to security of supply of materials and energy and to the EU's open strategic autonomy.

These indicators are complemented by, and aligned with, other EU monitoring tools such as the monitoring framework of the 8th Environment Action Programme, the Zero Pollution Monitoring and Outlook Report, the EU indicators for the Sustainable Development Goals and the Resilience Dashboard.

In my view, it is particularly important to bear in mind that most of the indicators mentioned are based on official statistics provided by Eurostat, which are therefore drawn from existing data and “meet the criteria of relevance, acceptability, credibility, ease of use and robustness”. If, then, we have access to statistics classified as “high quality”, available not only to all EU Member States (through the European Statistical System) but also to the research community,

why is it so often concluded that there is a lack of evaluation and decision-making based on such data? If I myself can access Eurostat databases and draw conclusions from them, where does the problem lie? The following pages will attempt to explain this.

The first thing we must acknowledge is that having sufficient data is not the same as using it. The problem is not (or should not be) a lack of willingness to adopt fair and effective regulations, but rather something that anyone who has held public office – or any attentive observer – can readily deduce: the legislative process involves so many stakeholders that the original objectives and the measures required to achieve them are frequently diluted or distorted. This is not about promoting technocracy over democracy, but rather about recognising that too often the common good is subordinated to an accumulation of individual interests – when in fact it should be understood as referring to the needs and interests of the community as a whole, and should take precedence over the particular interests of individuals.

In some cases, initiatives are influenced from the outset by fear – fear of provoking opposition from specific social, political or economic groups. Or simply by fear of losing votes due to the unpopularity of certain measures. The existence of lobbyists is nothing new, and their influence in Spain is growing. Let us recall that in 2016, the National Commission for Markets and Competition (CNMC) established a Public Register of Interest Groups,<sup>12</sup> based on the concept of “interest group” set out in the Resolution of the President dated 26 February 2016 on good practice in the CNMC’s relations with external stakeholders:

[...] natural or legal persons working on their own behalf or on behalf of others who, in relation to the activities of the National Commission for Markets and Competition (CNMC) and, in particular, in shaping its opinion, act in defence of their own interests, those of third parties or organisations, or even of other general interests.

Although it has not yet appeared in the above-mentioned register, a very recent initiative has been launched: CRECEMOS (Renewable Fuels and Circular Economy in Spain for Sustainable Mobility), a multi-sectoral association bringing together a large part of the mobility value chain. It represents 25 leading companies in energy, raw materials, industry, transport and retail. It is also supported by ASAJA (the Young Farmers’ Agricultural Association), representing the primary sector, and the University of Zaragoza. Its members include companies such as Mercadona, Alsa, Repsol, Airbus, Acteco, Enso, Estrella Galicia, Fertinagro, Grupo Corral, Lipsa, Logista, Oleofat, Saica Natur, Scania, Sesé, Técnicas Reunidas, Toyota, Vertex Bioenergy and Wärtsilä. Its goal is to promote the circular economy in Spain and the use of renewable fuels “as an existing option that is complementary to other alternatives to decarbonise all transport segments”.<sup>13</sup>

All the entities in the association are committed to the European Union's goal of achieving climate neutrality by 2050, and they argue that renewable fuels are "one of the main options for rapidly reducing transport emissions, particularly in aviation, maritime transport and heavy goods transport".

At the European level, lobbying is even more firmly embedded – and the circular economy is no exception. Take EUROPEN, the European Organisation for Packaging and the Environment, which defines itself as an organisation committed to climate neutrality by 2050, the protection of natural resources, the acceleration of circularity and the strengthening of EU competitiveness. On its website, EUROPEN describes its participation in stakeholder dialogues across a wide range of policy areas, shaping not only the future of packaging but also of European sustainability more broadly.<sup>14</sup> Among these discussions, taxation naturally features. In a July 2020 document entitled *Views of the Packaging Supply Chain on Fiscal Measures Related to Packaging Materials and Applications*, it was noted that several EU Member States had introduced or were considering the introduction of tax regimes on specific packaging materials and applications. The document also referred to the debate within the European Council on the introduction of a tax on non-recycled plastic packaging waste, as part of negotiations on the EU's Multiannual Financial Framework (MFF) for the 2021–2027 period. It was observed that this levy could lead to new national fiscal regimes (as indeed has happened). In this context, while the lobbyist explicitly expressed support for the political objectives set out in the European Green Deal – particularly the goal of ensuring that all packaging is reusable or recyclable by 2030 – it also expressed clear concern about the possible introduction of new or additional fiscal measures on packaging, due to the significant public investments required to meet those objectives. Private investment by supply chain actors was also highlighted. In light of all the above, EUROPEN concluded that the introduction of new fiscal measures could not be considered the most effective instrument for promoting the innovation and investment necessary to meet the policy objectives of the Green Deal.

In the document *Views of the Packaging Supply Chain on Fiscal Measures Related to Packaging Materials and Applications*, EUROPEN warned of the introduction of levies on certain packaging materials and formats by various EU Member States, as well as of the ongoing debate within the European Council regarding the potential introduction of a tax on non-recycled plastic packaging waste. As might be expected, the organisations represented by EUROPEN feared that the implementation of such an initiative could lead to the emergence of new national-level tax regimes. Thus, while reaffirming their commitment to the political objectives set out in the European Green Deal – namely, ensuring that all packaging is reusable or recyclable by 2030 – they expressed concern over the possible introduction of new or additional fiscal measures on packaging. In their view, fiscal measures are not the most effective tool for stimulating the innovation and investment required to meet the Green Deal's targets – particularly



in the absence of parallel investment in the packaging supply chain: “In the absence of earmarking revenues, there is no guarantee that the resources collected through such fiscal instruments will be reinvested into better collection, sorting and recycling infrastructures needed to increase the amount of packaging that is effectively recycled.” For this reason, the signatory organisations called for an investment budget equal to the projected revenue in order to support packaging circularity, including improvements to recycling technologies and national waste management infrastructures. Their proposal suggested that this could be achieved through the establishment of a dedicated and supplementary budget line within the MFF or via the Next Generation EU fund.

However, recognising that the adoption of fiscal measures was likely unavoidable, they insisted that such measures be designed in a manner that does not undermine the industry’s capacity to continue investing in packaging solutions, recycling technologies and more sustainable waste management systems. To this end, they argued that the costs borne by packaging users as a result of existing legislation must be considered, as well as the financial commitments associated with voluntary pledges made across the entire packaging value chain. EUROOPEN also emphasised that packaging users were already subject to fees under Extended Producer Responsibility (EPR) schemes, and that these were expected to increase significantly – particularly in light of the EU’s new legal requirements on waste designed to promote packaging recycling (EPR fee modulation based on eco-design criteria).

As we can see, when one scratches beneath the surface, lobbyists whose names evoke environmental protection and who claim that circularity is embedded in their DNA often reveal that one of their core concerns – underlying all others – is the protection of revenue. This may well recall Friedman’s well-known theory, which, in essence, holds that a company’s only responsibility is to maximise profits for its shareholders. Nonetheless, to criticise this concern without nuance may not be entirely fair, and its defence is, in fact, closely linked to the concept of a just transition, which is addressed in the following section. For now, let us retain the key argument advanced in support of this position: circularity must be promoted while safeguarding the integrity of the single market. To achieve this, fiscal measures must not be guided solely by revenue-raising objectives, but should instead aim to foster the availability of high-quality recycled materials across the EU at affordable prices, enabling their reintegration into the value chain. “In particular, they should encourage and reward the uptake of sustainable materials, for instance through a digressive scale or exemptions for recycled materials to enable packaging users to close the loop of circularity. It is also essential that such measures are non-discriminatory and avoid distortions and fragmentation of the EU Single Market.” Ultimately, what is proposed is to advance the use of tax systems as a mechanism to encourage the adoption of sustainable materials, through the implementation of rewards or incentives (such as regressive scales, exemptions, and so on).



It is therefore unsurprising that authors such as Menéndez Moreno describe the circular economy as “inextricable”<sup>15</sup> and make statements such as the following:

The need to care for the planet is as unquestionable as the need to care for oneself. However, this does not in any way justify the erratic and irresponsible regulation that has been observed, nor the repeated distortion of certain legal principles – as occurs, for example, when a person with a lower-value vehicle pays more tax than someone with a more expensive, but eco-friendly, vehicle; or when something as unrelated to any manifestation of wealth as “visual impact” is treated as a taxable event; or again, when taxes are imposed on those who generate unavoidable waste and dispose of it in accordance with the applicable regulations, under the pretext of promoting recycling – even though the tax rules make no distinction for those who are unable to recycle such waste.<sup>16</sup>

For my part, I must nevertheless acknowledge that the commitment to the circular economy remains one of the few viable options available in the search for solutions to the accelerating environmental degradation and climate change we are increasingly experiencing. Even so, the criticisms put forward by Professor Menéndez Moreno clearly deserve careful reflection.

### 3. Conclusion: on the need for a just transition to the circular economy through a cross-cutting approach

In my view, one of the main challenges in analysing taxation within the circular economy – and, by extension, environmental taxation – concerns the reconsideration or reconfiguration of the principle of economic capacity. And, of course, the concept of a “just transition”.

The term “transition” refers to far-reaching social change within a company, and when the objective of such change is to move from a linear model of production and consumption to a circular one – with all that this entails – it is essential that the noun “transition” be accompanied by the adjective “just”. This concept, which originates in the International Labour Organization (ILO)’s Guidelines for a Just Transition towards Environmentally Sustainable Economies and Societies (2015),<sup>17</sup> is difficult to define. However, as the ILO notes, it should be guided by a number of key principles: the need for broad social consensus on the objective of sustainability and the pathways to achieve it; the respect for and promotion of fundamental principles and rights at work; the integration of a gender perspective; the adoption of coherent public policies aimed at creating an enabling environment in which businesses, workers, investors and consumers can support and drive the transition; and the establishment of a just transition framework for all, with a view to promoting the creation of more decent work.

Although at first sight it may appear that the core of a just transition lies in labour regulation, in reality tax systems must also be included in any prior analysis undertaken before implementing measures in this area. Similarly, it is essential to strengthen the pursuit of justice in public spending – an indispensable element for the realisation of human dignity. While this text has focused on public revenues, it is important to underline that the transition to a circular economy – like environmental protection more broadly – is costly and often difficult to reflect adequately in public budgets. In this regard, the development of so-called green budgeting represents a key area in which progress is needed. Much work remains to be done, but it is imperative that such a crucial instrument for achieving environmental sustainability be approached through a genuinely cross-cutting and integrated perspective.

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## Notes

1 In 1970, B. de Mesana R. de Salas published an article in the *Revista de Estudios Agrosociales* (no. 70) entitled “El bosque y la conservación de la naturaleza en Vizcaya” (Forests and the Conservation of Nature in Biscay). In a brief paragraph, reference is made to how the French state (among others, it is noted) encouraged forest owners to reforest their land “by granting substantial compensation per hectare reforested, along with tax exemptions for a number of years and a three-quarters reduction in real rights applied to both sales and inheritance” (p. 43). Although the article does not take environmental protection as its starting point, it does show that over fifty years ago the tax system was already beginning to be considered an effective instrument for achieving environmental objectives.

2 Cf. A. Vaquera García, *Fiscalidad y medio ambiente* (Taxation and the Environment), Lex Nova, 1998.

3 Alongside these two works, many others could be cited, but I have chosen them because they were among the first to offer a deep and comprehensive view of environmental taxation. To them may be added, for example, the doctoral thesis of Professor García Luque: *La tributación ambiental: el deber de contribuir en la financiación y en la prevención de los gastos públicos en el siglo XXI* (Environmental Taxation: The Duty to Contribute in the Financing and Prevention of Public Expenditure in the 21st Century), defended at the University of Málaga in 2001.

4 However, as early as 2011, a publication appeared in which the term circular economy was already featured in the title: E. Carrera's “La crisis, la reforma fiscal ecológica y la economía circular” (The Crisis, Green Tax Reform and the Circular Economy), *Cantárida* [monthly journal of Cabezón y Comarca], 343, 2011.

5 B. García Carretero: “La fiscalidad ambiental en materia de residuos en el nuevo marco de una economía circular”, *Crónica Tributaria*, 170, 2019.

6 S. Sastre: “Instrumentos fiscales para una Economía Circular en España”. *Documents – Instituto de Estudios Fiscales*, 10, 2019.

7 M. M. Soto Moya: *Objetivos de desarrollo sostenible y Economía Circular. Desafíos en el ámbito fiscal*. Comares, 2019.

8 The title was intended to be original, but a quick Google search revealed a recent article using the same expression: V. García Herrera's “Redes sociales e inteligencia artificial: una simbiosis imperfecta” (Social Media and Artificial Intelligence: An Imperfect Symbiosis). *Actualidad civil*, 4, 2024.

9 A. Vaquera García: *De la tributación ambiental a las medidas financieras incentivadoras de la Economía Circular*. Aranzadi, 2020.

10 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52018DC0029>

- 11 <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52023DC0306>
- 12 Resolution of 9 March 2016 by the President of the National Commission for Markets and Competition, establishing the personal data file “Register of Interest Groups”.
- 13 <https://www.crecemos.org/en/crecemos-association/>
- 14 <https://www.europen-packaging.eu/policy-areas/>
- 15 According to the RAE Dictionary: “adj. Que no se puede desenredar, muy intrincado y confuso” (That which cannot be disentangled; highly intricate and confusing).
- 16 A. Menéndez Moreno: “Una tasa o similar de la inextricable economía circular” (A Tax or Similar Levy on the Inextricable Circular Economy). *Quincena Fiscal*, 5, 2024. By the same author: “¡Marchando: otra de ecológicos!: a propósito de los tributos que contempla la Ley 7/2022, de residuos y suelos contaminados para una economía circular” (Coming Right Up: Another Round of Green Taxes! On the Taxes Established by Law 7/2022 on Waste and Contaminated Soils for a Circular Economy). *Quincena Fiscal*, 15–16, 2022.
- 17 [https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed\\_emp/%40emp\\_ent/documents/publication/wcms\\_432859.pdf](https://www.ilo.org/sites/default/files/wcmsp5/groups/public/%40ed_emp/%40emp_ent/documents/publication/wcms_432859.pdf)

## Yolanda García Calvente

Yolanda García Calvente holds a PhD in law from the University of Málaga, which she completed in 2001. In 2003, she was appointed senior lecturer at the Autonomous University of Barcelona, and in 2007 at the University of Málaga, where she has held the position of professor of financial law since 2017. She is currently a professor at the University of Granada, a position she has held since September 2022. She holds four recognised six-year research periods (active) and one in knowledge transfer. She is the author of more than 100 publications on financial and tax law, published by the most prestigious Spanish legal publishers and academic journals, as well as several international ones. She has participated in 19 research projects, six of them as principal investigator. Her academic career includes research stays at international institutions such as Paris II, Bologna, Turin, Bergamo, Montreal and Strasbourg. She served as dean of the Faculty of Law at the University of Málaga (2009–2012), and for six years as vice-rector for academic staff at the same university (from 2016). She is a full member of the Economic and Social Council of Andalusia.

**DEBATE/DISCUSSION:** THE CIRCULAR ECONOMY FROM A LEGAL PERSPECTIVE. THE TAX SYSTEM AND LABOUR REGULATION IN THE CONTEXT OF ENVIRONMENTAL SUSTAINABILITY/  
LA ECONOMÍA CIRCULAR EN PERSPECTIVA JURÍDICA. SISTEMA TRIBUTARIO Y  
REGULACIÓN LABORAL ANTE LA SOSTENIBILIDAD AMBIENTAL

# Labour Regulation of Environmental Protection in Spain: The Role of the Law and Collective Bargaining

La regulación laboral de la protección del medio ambiente en España: el papel de la ley y de la negociación colectiva

**Carolina Gala Durán**

Autonomous University of Barcelona, Spain  
[carolina.gala@uab.cat](mailto:carolina.gala@uab.cat)

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## ABSTRACT

The aim of this paper is to analyse how labour law addresses the challenges of environmental protection, a just ecological transition and the circular economy. In this regard, it analyses the provisions of the Workers' Statute—the fundamental labour law framework—that relate to environmental matters on the one hand, and on the other, the role that collective bargaining can play in this area, given its greater flexibility and adaptability as a source of labour law. With the aim of also providing a practical perspective, over 280 recent collective agreements are evaluated from an environmental standpoint, highlighting their current—albeit very limited—commitment to environmental issues.

**KEYWORDS:** labour law; collective bargaining; environmental protection; just ecological transition; workers' rights; workers' representatives.

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## RESUMEN

El objetivo de este trabajo es analizar cómo se enfrenta el derecho del trabajo a los retos que implican la protección medioambiental, la transición ecológica justa y la economía circular. De este modo, por un lado, se analizan los preceptos que, en el Estatuto de los Trabajadores —norma básica laboral—, se refieren a la materia medioambiental. Y, por otro lado, se lleva a cabo un análisis del papel que el convenio colectivo puede jugar en esta materia, dada su mayor flexibilidad y adaptabilidad como fuente del derecho del trabajo. Con el objetivo de aportar también una visión práctica, se evalúan, desde la perspectiva medioambiental, más de doscientos ochenta convenios colectivos recientes, poniendo de relieve cuál es su compromiso actual —muy escaso— con las cuestiones medioambientales.

**PALABRAS CLAVE:** derecho del trabajo; negociación colectiva; protección del medio ambiente; transición ecológica justa; derechos de los trabajadores; representantes de los trabajadores.

## 1. The legal perspective

For years there has been significant concern regarding the need to protect the environment and combat climate change, reflected in regulatory measures and recommendations from various international organisations and the European Union itself, despite the persistent presence of denialist positions.

In a similar vein, although at a later stage, Spain has adopted numerous regulations at both the national and regional levels—for example, Law 7/2021 of 20 May on Climate Change and Energy Transition; Law 7/2019 of 29 November on the Circular Economy of Castile–La Mancha; and Regional Law 14/2018 of 18 June of Navarre on Waste and its Taxation.

However, within the specific framework of labour relations and labour law, Spanish regulation directly addressing companies' external environmental impact—as opposed to the so-called “working environment” related to occupational risk prevention (regulated under the Law on the Prevention of Occupational Risks—is both scarce and, moreover, dated rather than recent.

Thus, Article 64.7(c) of Royal Legislative Decree 2/2015 of 23 October, approving the consolidated text of the Workers' Statute (WS), states that workers' representatives have the right to collaborate with company management “to achieve the establishment of any measures aimed at maintaining and increasing productivity as well as the environmental sustainability of the company, if this is agreed in collective agree-

ments”. However, such collaboration depends on whether it is effectively included in the applicable collective agreement, which will also define its specific scope.

Additionally, there is a duty to inform workers’ representatives. Article 64.2(b) of the WS indicates that representatives have the right to receive quarterly updates on the company’s economic situation and the recent and probable evolution of its activities, “including environmental actions that have a direct impact on employment”. This duty of information is framed in rather general terms, which clearly undermines its effectiveness in practice. The legal terminology employed is excessively broad.

Therefore, as mentioned above, legal regulation is limited in scope and generic in content, which detracts from its effectiveness. One way to resolve this issue would be to have labour regulations—and, in particular, the WS—that focus more on environmental issues by updating (and expanding on) not only the provisions of Articles 64.2(b) and 64.7, but also by introducing new sections that clearly support a just ecological transition and the protection of the external environment as obligations incumbent on both companies and workers. This development appears to have already begun, albeit as a “defensive measure” and with a more general scope, with the recent inclusion in Article 37.3(g) of the WS of a leave of absence of up to four days for workers who are unable to access the workplace or travel along the necessary routes to reach it, as a result of recommendations, restrictions or prohibitions on movement imposed by the competent authorities, as well as in situations involving serious and imminent risk, including those arising from disasters or adverse weather events. After the initial four days, the leave may be extended until the circumstances that justified it no longer apply, without prejudice to the company’s right to temporarily suspend the employment contract or reduce the working hours due to force majeure, in accordance with the provisions of Article 47.6 of the WS. Where the nature of the work and the available communication infrastructure make teleworking feasible, the company may opt to allow it, provided that all formal and material obligations set out in Law 10/2021 of 9 July on Remote Work are met—particularly with regard to the provision of appropriate means, equipment and tools. This new paid leave was introduced in response to the catastrophe caused by the meteorological phenomenon known as DANA in the Valencian Community at the end of October 2024, which many have associated with climate change.

However, it should be borne in mind that, although labour regulations in this area are in clear need of improvement, concerns about the ecological transition and climate change have been more actively reflected within the framework of collective bargaining, particularly in recent years. Collective bargaining, moreover, constitutes a source of labour law, as established in Article 3 of the WS, with the resulting collective agreement carrying normative force. In short, it has legal value for both the companies and workers involved.

## 2. The relevant role of collective bargaining in environmental matters

First and foremost, it should be noted that, in light of the wording of Article 85.1 of the WS—which outlines the matters that may be included in the content of a collective agreement—it is entirely feasible for a collective agreement, regardless of its functional scope (whether at company or sectoral level), to address issues related to environmental protection and a just ecological transition, provided such regulation is agreed upon by the legitimate negotiating parties, as established in Article 87 of the WS. The aforementioned Article 85.1 merely states that, subject to legal provisions, collective agreements may govern

matters of an economic, labour and trade union nature and, in general, any other issues affecting the conditions of employment and the scope of relations between workers and their representative organisations and the employer and employer's associations. This includes procedures for resolving disagreements arising during the consultation periods referred to in Articles 40, 41, 47 and 51 [...].

Likewise, there is no doubt that the incorporation of an environmental commitment through collective bargaining—whether more or less extensive—will have a positive impact on the working and health conditions of the workers concerned, as well as on the wider community in which the company operates. It will also be beneficial from a business standpoint, potentially offering both economic and reputational advantages (in practice, environmental commitment is associated with corporate social responsibility). However, such commitment may entail certain economic costs, which, depending on the circumstances, can be significant. For worker representatives involved in negotiating collective agreements on behalf of workers—whether through unitary or trade union representation—it also means aligning with the objectives set out in the 5th Employment and Collective Bargaining Agreement for 2023–2025 (V AENC). This agreement makes several references to the challenges posed by the ecological transition, while also linking it to the technological and digital transitions.

However, this does not mean that collective agreements must necessarily contain provisions on environmental protection, a just ecological transition or the promotion of the circular economy—very few currently do—as it is up to the corresponding negotiating parties to determine their content. In fact, as stated in the second paragraph of Article 85.1 of the WS, negotiating parties are currently only obligated to negotiate measures aimed at promoting equal treatment and opportunities between women and men in the workplace and, where applicable, equality plans (in companies with 50 or more workers), in accordance with the provisions of Organic Law 3/2007 of 22 March for the Effective Equality of Women and Men.

Secondly, in our view, collective bargaining is a highly effective tool for integrating environmental commitment into labour relations in Spain, due to its significant capacity for influence, flexibility and adaptability to the specific circumstances of the functional area in which it is applied.



This ability has been highlighted in several documents by the International Labour Organization (ILO) (see, among others ILO: *Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy*) and the European Union (Laabbas–El–Guennouni, 2023). By way of example, the Opinion of the European Economic and Social Committee on green collective bargaining: good practices and future prospects (2023) states that:

[...] The EESC notes that studies on collective bargaining in EU countries conclude that inclusion of environmental issues in collective agreements is poor. The EESC calls on the EU and the Member States to further support actions and initiatives that will incentivise employers and workers to adapt to the green transition, taking into account practices of workplace information and consultation. [...] In this participatory governance model, collective bargaining is a tool for adapting the world of work to the new challenge of a fully sustainable production model. This is because of its ability to respond immediately, its closeness to sectoral realities and its potential to provide tailored solutions, including the protection of jobs and businesses. [...] The EESC encourages the social partners to include green transition processes in collective agreements, in line with their cross-industry and sectoral priorities, as appropriate. It goes on to say: [...] Collective bargaining is a good vehicle for facilitating the adaptation of organisations and employment, as well as working conditions, to the effects of climate change, and it makes it possible to assess and present companies' investment costs in order to maintain them and adapt them to the requirements of fair competitiveness (pp. 5–6).

Furthermore, at the national level, the aforementioned V AENC includes several recommendations—though not binding—on the just ecological transition, directed specifically at the parties negotiating collective agreements. The V AENC has been signed by the Spanish Confederation of Business Organizations (CEOE) and the Spanish Confederation of Small and Medium Enterprises (CEPYME), as well as the Workers' Commissions (CCOO) and General Union of Workers (UGT) trade unions. Thus:

1. The preamble of this agreement states that the usual challenges are joined by “the need to confront the major structural transformations—digital, ecological, demographic, caretaking—profoundly disruptive transformations also in employment and the functioning of companies, which the pandemic and the subsequent crises have accelerated.” It goes on to say that:

“We are firmly committed to the agile functioning of participatory mechanisms to face the major challenges posed by the major technological, digital and ecological transformations, and the disruptive consequences they have on companies and their activity and, therefore, on employment and its conditions. This should allow for a just transition to a reality that is not yet written, via anticipation, lifelong learning and re-skilling, addressing the various gaps so that no one is left behind.”

2. More specifically, Chapter XVI, entitled “Technological, digital and ecological transition”, and in particular its Section 4, “Ecological transition”, establishes that:
  - a. The ecological transition, energy decarbonisation and the circular economy, together with digitalisation, may alter production processes, affecting jobs, tasks and skills performed by workers. Indeed, new occupations may emerge at the same time as others disappear or are transformed.
  - b. These transitions, which are interrelated and mutually reinforcing, must be addressed early and effectively through collective bargaining, in the framework of participatory processes with workers’ representatives, in order to raise awareness and identify solutions that may be adapted to the specificities of the different sectors and raise key issues.
  - c. Within this framework, it is essential to identify new qualification needs and improve the skills, redesign jobs, organise transitions between jobs and improve the organisation of work. In order to achieve this objective, it is a priority to promote lines of training and information for workers to ensure their involvement in the adoption of measures required by climate change.
  - d. Likewise, in order to guarantee the reduction of emissions and the efficiency of the measures that, if applicable, are applied, both for the benefit of companies and workers, sustainable mobility plans will be promoted, encouraging collective transport through geographical areas, industrial estates or areas with a high concentration of workers.

Therefore, this document clearly sets out the objectives to be pursued in this area through collective bargaining, while emphasising the interconnection between the digital and ecological transitions; whether these objectives are actually being achieved in recent bargaining practice is another matter.

### 3. Analysis of recent collective bargaining: clauses on environmental protection and the just ecological transition

From a practical perspective, it is worth examining how interest in environmental protection is being reflected in collective agreements. To this end, 283 collective, sectoral and company agreements published in the *Official State Gazette* (OSG) between 1 September 2022 and 30 June 2024 have been analysed, providing a sufficiently representative sample. The following observations can be drawn from this analysis:

- 1.<sup>a</sup> Interest in the matter is low, as only 69 of the agreements analysed (24.38% of the total) make any reference to environmental protection and, of these, the vast majority (73.91%) are company or group-level collective agreements. It is also worth noting, however, that environmental content has been incorporated into these agreements, unlike in the past (Chacartegui Jávega, 2018, p. 87).
- 2.<sup>a</sup> On the other hand, it should be noted that these agreements span a diverse range of sectors. Many are concentrated in industries where the nature of the activity, products used or waste generated contribute significantly to pollution. These include transport and auxiliary companies, energy and oil and auxiliary services, food and beverages, retail and supermarkets, construction and related materials, home appliances, lifts, tyres, the chemical sector and industrial gases, leather and cork, technology, parcel delivery, paper and cardboard, travel agencies, fertilisers, and the automotive and waste management sectors. But there are also collective agreements with environmental content in sectors with a lower environmental impact, such as the insurance sector, certification and inspection, marketing, trade unions, occupational risk prevention services, social intervention or integration management and advertising. This is encouraging news, and hopefully it will be consolidated and expanded in the coming years.
- 3.<sup>a</sup> In many cases, environmental issues are connected to the company's obligation to ensure a safe working environment for its employees (the internal environment). This means they are often linked to occupational risk prevention—for example, both topics may be addressed within the same section or article of the agreement, with environmental responsibilities assigned to the health and safety committee and/or the prevention representatives established under the Occupational Risk Prevention Law.
- 4.<sup>a</sup> Although environmental clauses in an agreement logically apply mainly to the company, there are also instances where the workers themselves are bound by them—after all, it is regarded as a joint commitment aimed at protecting the interests of society as a whole. Moreover, many agreements assign a significant role to workers' representation. And, finally, in very few cases, the obligation extends beyond these to include suppliers (such as in the Collective Agreement of BSH Electrodomésticos España, SA, published in the OSG on 27 May 2024), and customers and subcontractor companies (both included in the Collective Agreement of Eurodepot España, SA, published in the OSG on 27 September 2023).

Some agreements explicitly call on the entire workforce to act proactively, stating that “all group employees shall be involved in environmental aspects through continuous improvement, promoting and encouraging en-

vironmental protection and conservation” (2nd Collective Agreement of Nortegas, published in the OSG on 1 February 2024). However, unlike with other agreements, no specific labour violation is stipulated in the event of non-compliance.

Alternatively, some agreements impose specific environmental obligations on workers, such as complying with environmental regulations and ensuring the monitoring of indicators that measure compliance with quality and environmental standards, which must be designed by the company’s management (the 4th Collective Agreement of Mediapost Spain, SL, published in the OSG on 28 December 2023), while others establish that all workers must respect legal and company environmental regulations and promote its protection in business activities (the Collective Agreement of Al Air Liquide España, SA and Air Liquide Ibérica de Gases, SLU, OSG of 5 December 2023). Furthermore, in some cases, workers are required to take into account the environmental impact of their actions and actively collaborate with customers and suppliers to prevent or reduce waste and emissions deriving from business operations (the 3rd Collective Agreement of KONE Elevadores, SA, OSG of 25 October 2023).

Finally, from another perspective, some agreements permit the application of corporate disciplinary measures when workers engage in conduct that may harm the company’s external environment. To this end, it is worth highlighting agreements that classify as minor violations the neglect or non-compliance with environmental protection measures when disposing of waste, residue and rubbish (the 8th State Sectoral Collective Agreement for Convenience Store Chains, OSG of 1 June 2024), or the failure to observe the environmental protection measures established in the agreement (the Collective Agreement of Eurodepot España, SA, OSG of 27 September 2023). And then there are agreements which, when assessing the severity of a violation, take into account, among other factors, whether the worker has caused economic damage or harm to the company’s image or to the environment (2nd Collective Agreement of the Parcial CEPESA Group, OSG of 28 February 2024).

- 5.<sup>a</sup>As for the environmental content included in collective agreements, as will be examined in more detail below, some agreements merely make general statements on the subject, others refer to it while incorporating a specific obligation and, finally, some include only a concrete obligation without broader commentary. It should also be noted that, in some agreements, corporate obligations can be inferred indirectly from the company’s duties of information and cooperation with worker representatives. However, as the wording of the agreements is often vague, it is not always clear whether the measures envisaged are binding or merely proposals or

recommendations. And, finally, it is noteworthy that explicit references to the circular economy are almost non-existent—with an exception being the Collective Agreement of the AXA Group, published in the OSG on 21 December 2023.

Therefore, it is clear that the inclusion of environmental issues in collective bargaining processes—so-called “green collective bargaining”—remains in its early stages, as evidenced by the limited number of such agreements, their concentration in specific sectors and the generally vague nature of their content. It will be interesting to observe how this trend develops in the future.

Taking the above into consideration, the following types of content can be distinguished:

- a. As indicated above, some agreements contain only broad statements about the existence of a company’s environmental commitment, such as “The parties signing this collective agreement consider it necessary for companies and their workers to act responsibly and respectfully with the environment, paying attention to its defence and protection in accordance with the interests and concerns of society” (8th State Sectoral Collective Agreement for Convenience Store Chains, OSG of 1 June 2024), or “The protection of the environment is a priority and beneficial for the effective development of our activities, for the communities in which the company is present and for workers” (Collective Agreement of Al Air Liquide España, SA and Air Liquide Ibérica de Gases, SLU, OSG of 5 December 2023).

Or, perhaps, a company merely signals that it will work “to promote the transition to a more sustainable aviation industry, which abandons the use of fossil fuels and strengthens its strategic alliances for the production of eco-fuels, in response to the climate and environmental challenges approved in the European Commission’s European Green Deal and European Climate Pact” (2nd Collective Agreement for cabin crew of Norwegian Air Resources Spain, SL, OSG of 15 November 2023). Some collective agreements—like the 3rd Collective Agreement of Quirón Prevención, SLU, (OSG of 19 July 2023)—frame the pursuit of a cleaner environment within the broader context of corporate social responsibility, often accompanied by general statements.

It is evident that these are commendable commitments, although they lack concrete measures or actions. Therefore, these are mere declarations of intent.

- b. Collective agreements such as that of BSH Electrodomésticos España, SA, (OSG of 27 May 2024) appear to go further by declaring environmental protection a fundamental objective of the company and outlining the

guiding principles of its environmental policy, including: 1) reducing environmental impact to prevent accidents causing harm throughout the production cycle; 2) taking appropriate measures to prevent accidents causing environmental harm or to minimise their effects; 3) ensuring proper management to implement an effective environmental policy; 4) complying with environmental protection laws and standards, including going beyond what is required; 5) encouraging all company members to behave respectfully towards the environment; 6) requiring suppliers to adopt a similar environmental policy; and 7) informing customers about the proper environmental use of products.

This type of regulation goes beyond a generic statement, yet the collective agreement does not specify how these principles should be implemented or include any follow-up mechanisms, making it impossible to assess whether or how they are actually put into practice.

Similarly, though on a smaller scale and expressed more generally, the 3rd Collective Agreement of the ACCIONA Energía Group set out objectives including: i) promoting and achieving responsible environmental action by companies; ii) establishing qualitative and quantitative targets for improvement, and iii) fostering responsible behaviour among the group's companies through the use of good environmental management practices and the communication of the results obtained (OSG of 21 May 2024).

- c. Some agreements place greater emphasis on environmental issues by including specific obligations and/or defining the role of workers' representatives in these matters. As previously mentioned, it is also worth highlighting those agreements that combine both approaches: they set out general commitments and principles or objectives, while also incorporating concrete measures. A notable example is the Collective Agreement for Leather Goods, Embossed Leathers and Other Similar Companies in Madrid, among other municipalities (OSG of 27 March 2024), which introduces the role of an environmental delegate and establishes a set of goals: 1) promote and achieve responsible environmental action by companies, specifying the measures to be implemented to this end; 2) establish both qualitative and quantitative improvement goals in order to communicate progress made towards these targets; 3) demonstrate to society the responsible behaviour of companies, both individually and collectively, through the adoption of sound environmental management practices and the dissemination of the results obtained; and 4) improve the credibility of the industry and build public and institutional trust through tangible actions and concrete figures.

The 2nd Collective Agreement of Nortegas (OSG of 1 February 2024), on the other hand, formally established the position of senior sustainability technician and lists the objectives of the company's environmental policy: a) create value for society by integrating environmental respect and protection and social responsibility into economic decision-making; b) comply with applicable environmental laws and regulations; c) set environmental goals and targets aligned with the continuous improvement commitment; d) require that suppliers comply with environmental requirements; e) provide appropriate channels for employee training, awareness and communication on environmental issues; and f) communicate the company's environmental commitment to the broader public. Finally, the Collective Agreement of Michelin Portugal España, SA (OSG of 30 October 2023) is also interesting as it references the company's "All Sustainable" strategy, which details its commitments in several key areas: direct action on climate change, the environmental impact of raw materials, indirect contribution to climate change, sustainable supplies and responsible supplier relationships. In addition, the agreement calls for the publication of an annual "Sustainable Development and Mobility Report", as well as concrete measures such as the drafting of an environmental management plan for each workplace and the appointment of an environmental delegate.

- 6.<sup>a</sup> From another perspective, some agreements express the need for the environmental actions undertaken to be communicated to, and duly recognised by, both society and the relevant public administrations (Collective Agreement of Saint-Gobain Cristalería, SL, OSG of 2 October 2023), or explicitly aim to inform society as a whole of the company's commitment to environmental protection (2nd Collective Agreement of Nortegas, OSG of 1 February 2024).

This reflects the company's desire to project a positive environmental image to a society that is increasingly aware and concerned about these issues. Of course, what truly matters is the effectiveness of the measures themselves, rather than the publicity surrounding them.

- 7.<sup>a</sup> Shifting our focus to matters where collective agreements include specific obligations or references—covering various aspects—it is worth highlighting the following:
- a. From the perspective of waste and emissions management, some provide measures for adequately managing waste, residues and rubbish disposal (8th State Sectoral Collective Agreement for Convenience Store Chains, OSG of 1 June 2024), while others merely mention the existence of a waste management plan (Collective Agreement of TK Elevadores España, SLU for Madrid and Valencia, OSG of 20 May 2024). There are obligations in certain agreements that compel workers to actively collaborate with customers and suppliers to prevent or reduce waste and emissions deriving from business



operations, as is the case in the 3rd Collective Agreement of KONE Elevadores, SA, published in the OSG on 25 October 2023. The Collective Agreement of the AXA Group (OSG of 21 December 2023), for example, declares that workers' IT equipment must be renewed according to sustainability criteria in order to reduce waste.

- b. An emphasis is placed on sustainable design, requiring that company facilities and equipment be properly designed, constructed, used and maintained in order to prevent them from becoming an environmental risk factor (for example, 3rd Collective Agreement of the Naturgy Group, OSG of 24 February 2023).
- c. The Collective Agreement for the Travel Agency Sector, which was published in the OSG on 2 September 2023, mentions voluntary adherence to the EU's Eco-Management and Audit Scheme (EMAS), established under the EMAS regulation, as well as the promotion of renewable energies, responsible tourism, sustainable mobility and the implementation of environmental management and energy-efficiency systems, while also including a commitment to complying with current environmental legislation.
- d. On the other hand, the Collective Agreement of Fundación Telefónica (OSG of 31 July 2023) promotes the recycling of electronic and electrical equipment, aligning purchasing processes with environmental standards to involve suppliers in reducing the environmental footprint, with both employees and suppliers being encouraged to adopt responsible environmental behaviour.
- e. From a broader corporate perspective—and undoubtedly representing a step forwards from previous approaches—some collective agreements refer to the adoption of an environmental management system based on company-defined standards (Collective Agreement of Mahou, SA, OSG of 18 April 2024). Others facilitate the continued implementation of such a system in the coming years across various areas of the company, aiming to promote natural resource conservation and improve energy efficiency, creating an environmental management team responsible for raising awareness, fostering communication and ensuring the internal dissemination of environmental matters (3rd Collective Agreement of Telefónica de España, SAU, Telefónica Móviles España, SAU and Telefónica Soluciones de Informática y Comunicaciones, SAU, OSG of 28 February 2024). This team will include six worker representatives, designated according to their representativeness among the signatory parties, and will meet quarterly.

Some agreements also provide for the development of an environmental management plan at each workplace, addressing issues such as waste storage and treatment, emissions and discharges into the environment, water purification and the gradual replacement of energy sources and materials



with cleaner alternatives (see, for example, the Collective Agreement of Michelin España Portugal, SA, OSG of 30 October 2023). In other cases, details on the potential implementation of environmental management systems are simply mentioned (including in the 7th Collective Agreement for Scrap Industries, OSG of 16 February 2024), but it is not always clear whether it is referring to a proposal or an obligation to implement such a system (Collective Agreement of Lufthansa, OSG of 12 January 2024).

- f. On the other hand, some agreements already include categories or groups of professionals directly related to the environment (among others, the 10th Collective Agreement of Danone, SA, OSG of 25 November 2023, and the Collective Agreement of Maxam and its group companies, OSG of 18 April 2024), creating positions such as environmental technician, senior sustainability technician, treatment manager, environmental manager and environmental technician. In other cases, environmental responsibilities are assigned to broader professional categories or groups, such as supervisors, foremen, operational teams, department heads or managers, cross-cutting departments, integrated management system (IMS) managers, and quality and environmental specialists (for example, in the 4th Collective Agreement of Abertis Autopistas España Business Group Companies [UNaAE], OSG of 28 December 2023, and the 4th Collective Agreement of Mediapost Spain, SL, OSG of 28 December 2023). It is likely that these roles and/or professional categories will be further expanded in the future.
- g. It is also important to note that certain agreements address environmental training needs, which undoubtedly contributes to more effective management of these issues. There is no doubt that the ecological transition must be supported by training aimed at both enhancing existing skills and providing re-skilling opportunities, enabling individuals to acquire new knowledge as a means to access and remain in the labour market (Miñarro Yanini, 2022, pp. 10–11).

However, agreements lack specifics regarding the content of training, such as its duration, periodicity and when and where it will be given. It is also worth noting that such training should be more rigorous for roles or functions with a closer connection to environmental matters—including company management—as well as for staff representatives. In this area, a number of different situations can be identified in recent collective bargaining:

1. Agreements that mandate this training for the entire workforce (although it is not always clear whether this training has already been implemented) (for example, the 1st Collective Agreement for Baking Flour and Semolina Sector Companies, OSG of 3 May 2024). This is the most appropriate option, without this affecting the company's ability to establish even more specialised training for workers' representatives and those in management positions.

2. Agreements that provide for environmental training when required for the performance of a specific role (for example, the Collective Agreement of Fertiberia, SA, OSG of 26 January 2023).
  3. Collective agreements that only require this for workers' representatives: environmental delegates, members of the occupational health and safety committee, and prevention delegates (for example, the 9th State Collective Agreement for the Cork Industry, OSG of 7 September 2023, and the 8th General Collective Agreement for the Cement Derivatives Sector, OSG of 14 July 2023).
  4. Collective agreements where the environmental delegate is expected to collaborate in designing and carrying out environmental training actions (for example, the State Collective Agreement for the Tanning, Belts and Industrial Leathers and Leather Tanning Industries, OSG of 22 March 2023).
- h. Very few collective agreements mention environmental information programmes aimed at the company's employees and collaborators—including customers, suppliers and subcontractors (for example, the Collective Agreement of Eurodepot España, SA, OSG of 27 September 2023). In our view, information also plays a key role in this issue.
- i. It is also worth considering teleworking, which is increasingly promoted as a more socially sustainable and inclusive work organisation model—and, naturally, one that is more respectful of the environment (for example, the 7th Collective Agreement of the Generali España Group, OSG of 18 November 2022). To this end, it should be noted that, as theoretical studies have highlighted, while teleworking reduces the carbon footprint by lowering CO<sub>2</sub> emissions from commuting, it also increases individual energy consumption, resulting in a negative overall impact in “green” terms (Miñarro Yanini, 2021, p. 10). The potential negative impacts of teleworking on employees are also notable, including social isolation, effects on career progression and work–life balance, and a blurring of boundaries between personal and professional spaces.
- j. Regarding sustainable mobility, the Collective Agreement of Lufthansa (OSG of 12 January 2024) establishes a sustainable mobility plan aimed at decreasing accidents during commutes and lowering polluting emissions (see Martínez Barroso, 2020, pp. 707 et seq.), while the Collective Agreement of Telefónica's Global Units in Spain, (OSG of 9 June 2023) also promotes sustainable mobility. More specifically, the 3rd Collective Agreement of the Naturgy Group (OSG of 24 February 2023) indicates that company employees can request a repayable advance of 8,000 euros in order to purchase a

sustainable vehicle—whether eco or zero-emission—or a loan of 20,000 euros for an electric or hybrid vehicle, as is the case in the 7th Collective Agreement of the Generali España Group, (OSG of 18 November 2022).

- k. Finally, it is quite common for collective agreements to assign a significant role to worker representation in environmental matters, providing for positions such as environmental delegate, sustainability delegate and the health, safety and environment committee. In other cases, responsibilities in this area are assigned to prevention delegates, the health and safety committee, the inter-centre committee or the standing committee of the agreement; alternatively, specific committees or working groups are established. This goes well beyond the stipulations of Article 64.7(c) of the WS, which we analysed above.

It is also interesting to note that some agreements require companies to appoint an environmental manager to promote collaboration and coordination with worker representatives in all environmental actions (for example, the State Collective Agreement for the Tanning, Belts and Industrial Leathers and Leather Tanning Industries, OSG of 22 March 2023), or stipulate that companies must designate a person responsible for dialogue with the environmental delegate from among the representatives on the health and safety committee (Collective Agreement for Leather Goods, Embossed Leathers and Other Similar Companies in Madrid, Castile-La Mancha, La Rioja, Cantabria, Burgos, Soria, Segovia, Ávila, Valladolid and Palencia, OSG of 27 March 2024).

## 4. Concluding thoughts

Unlike other disciplines—both legal and non-legal—labour and social security law has, until now, paid little attention to the challenges involved in protecting the environment, the just ecological transition and the circular economy. This is despite being one of the areas directly affected by these issues, both from the perspective of companies and from the point of view of workers and their representatives. There is no doubt that the external environment of companies limits or conditions the way workers provide services and imposes new obligations and responsibilities, mainly on companies, but also on workers and their representatives.

This is not to say that nothing has been done. There are some references in the Workers' Statute to the environmental intervention of workers' representatives in companies, and recently a new paid leave was introduced for workers unable to attend work due to extreme weather events, such as the DANA that affected the Valencian Community a few months ago. However, there is still a long way to go, especially from the perspective of internal flexibility measures and the organisation of working time and leave.

On a positive note, recent collective bargaining has begun to regulate aspects related to environmental protection, although the number of collective agreements addressing these issues remains very limited. This is an important step, but as we have seen, these interventions often consist of generic references without specific or wide-ranging obligations. Equally encouraging is the fact that some agreements have introduced specific roles, such as the environmental delegate, whose responsibility is, among other things, to ensure that companies comply with their environmental obligations.

In our view, collective bargaining is a highly useful instrument for advancing environmental matters—perhaps even more so than legislation—but it remains far from being a common or frequent element of collective agreements. The economic and organisational costs to companies of implementing environmental and just ecological transition policies are likely major obstacles to wider adoption. But we must be optimistic.

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## Carolina Gala Durán

She holds a PhD in law from the Autonomous University of Barcelona (UAB), which she completed in 1995. In recent years, she has published more than 50 articles in indexed journals (Latindex, Dialnet, DOAJ, IBSS, EBSCOhost, Ulrich's Periodicals Directory and IN-RECJ) and has been awarded five six-year research periods. In addition, she has authored several monographs and contributed to numerous book chapters for prestigious publishers. She has continuously participated in competitive research projects, both as principal investigator and as a member of research teams. Her research has been recognised with academic awards, and she has collaborated with institutions across Spain and internationally. She is currently the director of the Department of Public Law and Historical-Juridical Sciences, and formerly held the position of director of the Observatory for Equality, both at the Autonomous University of Barcelona.



**DEBATE/DISCUSSION:** THE CIRCULAR ECONOMY FROM A LEGAL PERSPECTIVE. THE TAX SYSTEM AND LABOUR REGULATION IN THE CONTEXT OF ENVIRONMENTAL SUSTAINABILITY/  
LA ECONOMÍA CIRCULAR EN PERSPECTIVA JURÍDICA. SISTEMA TRIBUTARIO Y REGULACIÓN LABORAL ANTE LA SOSTENIBILIDAD AMBIENTAL

# French Taxation Poorly Suited to the Circular Economy

Una fiscalidad francesa poco adaptada a la economía circular

**Bruno Trescher**

University of Strasbourg, France  
[bruno.trescher@unistra.fr](mailto:bruno.trescher@unistra.fr)

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## ABSTRACT

This article aims to examine taxation in relation to the circular economy in France and assess whether the French tax system incentivises or hinders the transition towards circularity. In this context, despite the adoption of the “polluter pays” principle, the article highlights a fiscal framework that remains largely unsupportive of the circular economy, as demonstrated – among other examples – by the inadequacy of the private copying levy, the VAT Compensation Fund and the limited scope of tax incentives for innovation. Beyond simply identifying the barriers to circularity, the article proposes a series of reflections intended to offer insights into how France might shift from a tax system ill-suited to the circular economy to one that actively promotes its advancement.

**KEYWORDS:** circular economy; taxation; incentives; European Union; circularity; waste management; global sustainability and resilience; GHG emissions.

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## RESUMEN

El objetivo de este artículo es analizar la fiscalidad de la economía circular en Francia e intentar comprobar si el sistema fiscal francés incentiva o desincentiva la transición hacia la circularidad. En ese sentido, habiendo asumido el principio de «quien contamina paga», se observa la existencia de una fiscalidad hostil en el tratamiento tributario de la economía circular como se puede inferir, entre otros, de la inadecuación de la compensación por copia privada o del Fondo de compensación del IVA, así como de las medidas fiscales de apoyo a la innovación. Más allá de la mera identificación de los obstáculos a la economía circular, se proponen unas reflexiones para intentar proporcionar algunas claves para que Francia pueda pasar de una fiscalidad inadaptada a la economía circular a otra que sea realmente incentivadora.

**PALABRAS CLAVE:** economía circular; fiscalidad; incentivos; Unión Europea; circularidad; gestión de residuos; sostenibilidad global y resiliencia; emisiones de GEI.

## 1. Introduction

Does French taxation favour the circular economy? Regrettably, the answer to this question can only be negative. Although it accounts for a significant share of public revenue (almost €70 billion, or 2.2% of the GDP), French environmental taxation does not appear to foster the development of a circular economy. Several reasons underpin this disappointing conclusion.

However, before examining them, it is worth recalling that the “polluter pays” principle, which underpins the logic of the circular economy, is not enshrined in the French constitutional framework. While Article L. 110-1 of the French Environmental Code does refer to it, stating that “the costs resulting from pollution prevention, reduction and control measures must be borne by the polluter”, the principle is not expressly mentioned in the Environmental Charter. Despite former President Jacques Chirac’s intention to enshrine it in the Charter, the “polluter pays” principle was ultimately replaced with a more general and imprecise obligation for any person to contribute to the remediation of environmental damage (Article 4). Even if largely symbolic, this omission is indicative of the nature of French taxation, which tends to follow a financial rationale rather than an environmental one.

To support this assertion, one could point to taxes on polluting activities whose effectiveness in advancing the circular economy remains questionable. More significantly, however, there is a need to highlight the existence of clearly “disincentivising” fiscal measures, recently criticised by the National Institute for the Circular Economy – a leading think tank on issues relating to the economy and resource conservation.



## 2. The “polluter pays” principle as embodied in the General Tax on Polluting Activities (TGAP), yet insufficient to promote the circular economy

In France, the application of the “polluter pays” principle in the 1990s led to the creation of a multitude of sector-specific taxes with highly disparate bases and regulatory frameworks. Alongside genuine taxes, a range of levies and parafiscal charges of varying effectiveness were introduced, intended to generate the resources required to remedy the environmental damage caused by polluting activities. By way of example, particular mention may be made of:

- The tax on the storage of municipal solid waste, established by Law 92-646 of 13 July 1992 concerning waste disposal and classified installations for the protection of the environment.
- The tax on the disposal of special industrial waste, established by Law 95-101 of 2 February 1995 aimed at strengthening environmental protection.
- The parafiscal tax on base oils, from which used oils are derived, established by Decree 86-549 of 14 March 1986 for the benefit of the National Agency for the Recovery and Disposal of Waste (ANRED).
- The parafiscal tax on air pollution, established by Decree 85-582 of 7 June 1985 and collected by the Air Quality Agency.
- The tax on noise pollution reduction, established by Law 92-1444 of 31 December 1992 on combating noise, which later evolved into the tax on aircraft noise pollution (amending the Budget Law of 30 December 2003).

Given the lack of consistency across these various taxes, France ultimately implemented the “polluter pays” principle through a general tax that has been in constant evolution (A), composed of several elements intended to encompass all types of pollution (B), while maintaining a unified legal regime (C).

### A. The evolving architecture of the TGAP: sign of adaptability or source of instability?

In the late 1990s, following the report by Nicole Bricq<sup>1</sup>, these individual levies were merged into a new, overarching tax established by Article 45 of Law 98-1266 of 30 December 1998 on the 1999 budget, and codified in Article 266 sexies of the Customs Code: the General Tax on Polluting Activities (TGAP). Its purpose was to operationalise the “polluter pays” principle and incentivise polluters to change their behaviour. Initially presented as the natural framework for a future ecotax, the TGAP was intended to apply universally across all polluting activities and to simplify environmental taxation, particularly in relation to the ap-

plication of the “polluter pays” principle. However, this objective has not been achieved.

- To begin with, the definition of pollution remains relatively imprecise. It is based primarily on Article L. 124–2 of the Environmental Code, which lists various forms of environmental harm without offering a clear definition<sup>2</sup>. This list functions as a kind of catch-all, highlighting the conceptual challenges inherent in defining the environment – resulting in a mere juxtaposition of unrelated elements without any coherent conceptual framework. Although frequently criticised, this vagueness does offer the advantage of allowing for ongoing adaptation to new forms of pollution.
- It is this feature that explains the numerous developments in the TGAP over time. Initially, the tax primarily targeted municipal solid waste storage facilities, aircraft operations, the supply of lubricants and certain types of air pollution. In 2000, however, it was extended to cover three additional polluting activities: the manufacture of detergents, mineral extraction and classified installations for producing antiparasitic products (subsequently removed in 2008). Conversely, in 2005, the TGAP on noise, which had taxed airline operators, was replaced by a tax specifically targeting aircraft noise pollution. Later, in 2007, a TGAP was briefly introduced for producers of printed advertising materials. In 2021, the “lubricants” component of the TGAP was abolished and, finally, in 2024, the “waste” component was expanded to include radioactive metallic waste. While this continual adaptation to emerging forms of pollution may reflect contemporary challenges, it nevertheless creates an impression of instability and a lack of legal certainty and predictability.
- Another source of concern is the destination of revenue generated by the TGAP. Whereas parafiscal taxes were originally earmarked explicitly for pollution control and to finance environmental agencies, this is no longer systematically the case. Depending on the period, these agencies may have received a portion of TGAP revenue – but not all of it. Following the reform of TGAP collection procedures, the principle of assigning the proceeds to environmental expenditure has been abandoned, with funds now redirected to the state's general budget. This represents a regression compared to the original arrangement.

## B. Current components of the TGAP

Given that pollution arises from a range of sources, the TGAP comprises several components in an effort to adapt the “polluter pays” principle to differing circumstances.

### *Component I: TGAP on waste storage and treatment*

The TGAP is payable not only by operators of hazardous or non-hazardous waste storage or thermal treatment facilities requiring authorisation as classified installations for the protection of the environment (ICPE), but also by those who transfer waste to another state, either directly or via third parties. By contrast, the tax does not apply to facilities used exclusively for waste generated by the operator itself, nor to the reception or transfer of waste to another state when it is intended for material recovery.<sup>3</sup> The tax is calculated based on the weight of waste received or transferred, with the rate per tonne varying according to the type and characteristics of the facility (non-hazardous waste storage plants, non-hazardous waste thermal treatment plants and similar, hazardous waste thermal treatment plants and hazardous waste storage plants).

### *Component II: TGAP on emissions of polluting substances into the atmosphere*

This component of the TGAP is one of the mechanisms available to France to meet its targets for reducing atmospheric pollutant emissions, in line with Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe. This tax is levied on any operator of an installation requiring authorisation or registration as an ICPE with a maximum thermal capacity of 20 MW or more, or with a municipal solid waste thermal treatment capacity exceeding 3 tonnes per hour. The tax is calculated on the weight of specific substances<sup>4</sup> released into the atmosphere, with rates varying according to the nature of the substances emitted.

### *Component III: TGAP on the supply or use of aggregates*

The aggregates component of the TGAP applies to businesses that supply or use these materials, which are defined according to four cumulative criteria: size,<sup>5</sup> origin,<sup>6</sup> characteristics<sup>7</sup> and intended purpose. This component is calculated based on the volume of product supplied or used, expressed in tonnes, according to a uniform rate per tonne.

### *Component IV: TGAP on the supply or use of detergents*

To combat pollution of groundwater and watercourses – caused by the proliferation of algae that can suffocate and eliminate other forms of aquatic life – a “detergents” component was added to the TGAP. The tax is applicable to any person who, in the course of their economic activity, supplies or uses detergents in France, including laundry auxiliaries, fabric softeners and conditioners. The tax is based on the net weight of the relevant preparations or products, with the rate (per tonne) varying according to their phosphate content. However, this tax remains far from dissuasive for industry – primarily because it raises just €50

million, and more importantly because businesses are able to pass the cost on to their customers. It is therefore understandable that the legislature opted for a partial ban on these phosphates,<sup>8</sup> which proves more effective than relying on taxation alone.

### C. A TGAP with multiple components but a single legal framework

Although the TGAP comprises several components, it is worth noting that these are subject to a harmonised regime.

The TGAP is declared, audited and settled in accordance with the rules, guarantees, privileges and penalties applicable to revenue taxes (VAT).<sup>9</sup>

Moreover, since 2021, and following its alignment with VAT mechanisms, the TGAP has been collected by the Directorate General of Public Finances (DGFIP). This reform has significantly simplified tax declaration procedures.

From 2024 onwards, TGAP rates have also been indexed to inflation, resulting in annual increases. Article 104, I-B of the 2024 Budget Law amends Article 266 novies, 1 bis of the Customs Code, which establishes the indexation rules for the various components of the tax. As of 1 January each year, the rates are adjusted in line with the annual change in France's consumer price index (as set out in Articles L. 132-1 and L. 132-2 of the Goods and Services Tax Code).

Ultimately, this brief overview demonstrates that the TGAP effectively embodies the “polluter pays” principle and penalises the most polluting companies. The revenue it generates – nearly €1.3 billion – is far from negligible. However, its impact on the development of the circular economy is minimal: beyond the fact that it can be passed on to the end customer, it suffers from the significant drawback that the proceeds are no longer earmarked for environmental initiatives, but are instead absorbed into the general state budget. This lack of specific allocation represents a step backwards compared with the original system in place prior to 1999.

## 3. Fiscal measures to support the circular economy still in need of improvement

In addition to environmental and energy-related taxes, it is regrettable that the general tax system often proves hostile to the development of a circular economy (A). For this reason, the National Institute for the Circular Economy (INEC) advocates a revision – or even the abolition – of certain taxes (B).

## A. A tax system hostile to the circular economy

Certain taxes and fiscal measures act as barriers to the circular economy, as illustrated by the following three examples:

### 1. *The inadequacy of the private copying compensation scheme*

The digital levy (RCP) is a charge introduced in several countries, including France, to compensate authors, performers, producers and publishers for the private reproduction of their works by individuals. This private copying compensation, set out in Article L. 311-3 of the Intellectual Property Code, applies primarily to storage devices such as hard drives, USB sticks, smartphones and the like, which can be used to copy copyright-protected content. It is a fixed charge, independent of the retail price, with a rate that depends on the storage capacity of the device. Traditionally, the levy applied only to new devices. However, it is regrettable that, since 1 July 2021, refurbished tablets and smartphones have also been subject to the levy, albeit at a separate and reduced rate. The National Institute for the Circular Economy rightly argues that applying the digital levy to refurbished devices is both illegitimate and outdated in the era of streaming – and, above all, that the product has already “paid the tax” when first sold as new. This measure has resulted in price increases of up to 10% for smartphones and has weakened the competitiveness of French refurbishment businesses, both in comparison with foreign competitors and with new products.

### 2. *The inadequacy of the VAT Compensation Fund*

In relation to VAT, there is a structural issue with the operation of the VAT Compensation Fund. At present, regional and local authorities, being non-taxable entities, are not entitled to deduct the VAT incurred on their purchases of goods and services. To address this, the state reimburses these authorities via the VAT Compensation Fund for the VAT they have paid on the purchase of capital goods. The problem is that reimbursements made through the Fund relate primarily to the VAT incurred on the acquisition of new goods, not second-hand goods. Similarly, if a regional or local authority chooses to lease an asset rather than purchase it, it cannot claim a VAT refund through the Fund. As a result, from a fiscal perspective, regional and local authorities are strongly incentivised to acquire new goods – despite the Public Procurement Code requiring them to implement a sustainable procurement policy.

### 3. *The inadequacy of tax measures supporting innovation*

Although the overall tax treatment of businesses in France is often criticised as unattractive and detrimental to competitiveness, there is one notable exception: the Research Tax Credit (CIR). This scheme is intended to encourage companies to engage in research and development (R&D) by covering a portion of the expenses incurred. Depending on the amount of R&D expenditure, the applicable rate is 30% for expenses up to €100 million and 5% for any amount exceeding that threshold.<sup>10</sup> The credit is deducted directly from corporation tax (or from income tax in the case of sole traders). In terms of basic research, applied research and experimental development, the scope of the Research Tax Credit appears broad and is regarded as a key factor in France's attractiveness to investment.

However, this perception does not hold true in the context of support for the circular economy. It is regrettable that sustainable development and the circular economy are not taken into account. Indeed, the only expenditure eligible under the Research Tax Credit is the purchase of “new” equipment. As a result, there is no incentive for companies to use second-hand or refurbished equipment. The same applies to depreciation: Article 244 quater B of the General Tax Code states that depreciation allowances apply only to “assets created or acquired new and directly allocated to scientific and technical research operations, including the design of prototypes or pilot installations”.

In the same vein, it is worth noting that very few of the fiscal measures supporting entrepreneurship – such as the “young innovative company”, “young academic company” or “young growth company” schemes – are directed towards circular economy activities, as these measures incorporate few, if any, environmental impact criteria. Too often, the eligibility conditions outlined in Articles 44 sexies et seq. of the General Tax Code tend to exclude circular activities, which are not considered sufficiently “innovative” in scientific or technological terms.

Nevertheless, it is important to acknowledge recent progress in adapting fiscal policy to support sustainable development, even if this progress is not directly connected to the circular economy. Law 2023-1322 of 29 December, relating to the 2024 Budget, introduced a Green Industry Investment Tax Credit (C3IV)<sup>11</sup> to encourage the domestic production of technologies necessary for the energy transition. The measure is designed to enable companies to undertake new industrial projects in key sectors for the energy transition, such as battery manufacturing, solar panels, wind turbines and heat pumps. In these four sectors, the tax credit – set at a rate of between 20% and 40% – applies to investments in both tangible assets (land, buildings, infrastructure, equipment and machinery) and intangible assets (patent rights, licences, know-how and other intellectu-

al property rights) essential for business development. Although the total tax credit is capped at €150 million per company,<sup>12</sup> the measure is clearly aimed at supporting sustainable development. The French government expects it to generate nearly €23 billion in investment and create 40,000 direct jobs in France by 2030. While the C3IV represents a promising step in the right direction, it overlooks the circular economy by focusing exclusively on energy production rather than considering the full life cycle of products. As the National Institute for the Circular Economy has pointed out, the scope of the measure should be broadened to include companies investing in the recycling and reuse of wind turbines, photovoltaic panels, batteries and heat pumps. In conclusion, the Green Industry Investment Tax Credit may be regarded as “an interesting initiative, but an incomplete one, as it fails to account for the ‘resource’ cost involved”.

## B. Some avenues for reflection

In light of the preceding observations, the proposals put forward by the National Institute for the Circular Economy – namely, to abolish the digital levy on refurbished smartphones and tablets, and to extend the Research Tax Credit to second-hand and refurbished devices – are fully deserving of support.

### 1. *Desirable VAT adjustments in favour of a circular economy*

In many respects, VAT appears to be the tax with the greatest potential for modernisation to improve the fiscal treatment of the circular economy by encouraging businesses to adopt circular practices.

- First, to promote greater adherence by regional and local authorities to sustainable development requirements and to the logic of the circular economy – by considering the full life cycle of products, as mandated by the Public Procurement Code – it would be appropriate to revise the operation of the VAT Compensation Fund. Specifically, the time has come for this Fund to permit reimbursements of VAT on leasing expenses for capital goods, as well as on the purchase of second-hand goods. Such a reform would help level the playing field, countering the current advantage enjoyed by new products over refurbished ones.
- Next, a reduced VAT rate of 5.5% should be applied to repair services covering household appliances, footwear and leather goods, clothing and home textiles, and bicycles. Without artisans – such as cobblers, repairers and tailors – even eco-designed products cannot be repaired. To foster the repair sector, it should benefit from a reduced VAT rate. Council Directive (EU) 2022/542 of 5 April 2022 amending Directives 2006/112/EC and (EU) 2020/285 as regards rates of value added tax explicitly opens up this possibility for “the supply of repairing services of household appli-

ances, shoes and leather goods, clothing and household linen (including mending and alteration)”.

- Finally, a further proposal would be to introduce a reduced VAT rate of 5.5% for eco-designed or refurbished manufactured goods. Currently, these products are subject to the same tax treatment as new, less sustainable alternatives – which often have the added competitive advantage of being less expensive. To encourage consumers to make more sustainable purchasing choices, the implementation of favourable VAT treatment would represent a decisive incentive.

## 2. *Reforming water taxation*

A final point that highlights the limited consideration given to the circular economy within French taxation is the case of water-related taxation. In France, responsibility for the protection of water resources and aquatic environments lies primarily with the water agencies (formerly known as basin agencies), which oversee and safeguard these ecosystems. These agencies are public administrative bodies operating under public law and under the authority of the state. As defined in Article L. 213-8-1 of the Environmental Code, their mission is to promote the balanced and sustainable management of water resources and aquatic environments, ensure the supply of drinking water, control flooding and support the sustainable development of economic activity. The six agencies operating across mainland France are funded through water charges, which generate €2.2 billion annually – more than the revenue from the General Tax on Polluting Activities. These charges, governed by Articles L. 213-10 et seq. of the Environmental Code, consist of seven<sup>13</sup> categories and primarily concern pollution of domestic origin, pollution from non-domestic sources (industry and agriculture) and the abstraction and storage of water. At first glance, they appear to follow a “polluter pays” approach – yet in practice, this logic proves rather limited. What is taxed is water consumption, not actual pollution. As a result, under the domestic pollution charge, households account for 48% of the total revenue collected, simply because water consumption is the sole criterion used in its calculation – regardless of any real contribution to pollution. In recognition of this inconsistency, Law 2023-1322 of 29 December 2023 changes the name of the “domestic pollution charge” to the “drinking water consumption charge”<sup>14</sup> (alongside an “efficiency charge” – for the efficiency of drinking water networks – and a charge for the efficiency of collective sanitation systems). This new terminology better reflects the reality that the so-called domestic pollution charge is, in fact, only marginally linked to actual water pollution.



## 4. Conclusion

In France, taxation in support of the circular economy remains in its infancy: it prioritises innovation and the production of renewable energy, to the detriment of any real consideration of product life cycles. This disappointing reality underscores the need for more substantial efforts to ensure that taxation becomes a true lever for advancing the circular economy.

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## Notes

1 N. Bricq, Pour un développement durable: une fiscalité au service de l'environnement, Paris, A.N., *Doc. parl*, XI<sup>e</sup> Législ, 1000, 23 June 1998, p. 175.

2 Article L. 124-2: "For the purposes of this chapter, environmental information shall mean any available information, regardless of its format, relating to:

1. The state of elements of the environment – in particular, air, atmosphere, water, soil, land, landscapes, natural sites, coastal or marine areas and biodiversity – as well as the interactions between these elements;

2. Decisions, activities and factors, especially substances, energy, noise, radiation, waste, emissions, discharges and other releases, that may affect the state of the elements mentioned in point 1, as well as decisions and activities aimed at protecting those elements;

3. The state of human health, safety and living conditions, buildings and cultural heritage, insofar as they are or may be affected by the environmental elements, decisions, activities or factors mentioned above;

4. Cost–benefit analyses and economic assumptions used in connection with the decisions and activities mentioned in point 2;

5. Reports prepared by or on behalf of public authorities regarding the implementation of environmental legal and regulatory provisions."

3 In addition, the TGAP does not apply to operations involving:

- waste from construction and insulation materials containing asbestos or asbestos fibres;
- waste generated by natural disasters;
- waste received by co-incineration plants;
- waste prepared as solid recovered fuel, whether combined with other fuels or not, for the generation of heat or electricity;
- waste subject to the "special energy tax" provided for in Article L. 312-1 of the Goods and Services Tax Code (CIBS) for amounts collected on energy products other than electricity;
- waste that does not decompose, combust or undergo physical or chemical reaction, does not biodegrade and does not damage other materials it comes into contact with in a way that may cause environmental pollution or harm human health;
- waste for which material recovery is prohibited or disposal is mandatory.

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4 In particular: sulphur oxides, hydrochloric acid, nitrous oxide, nitrogen oxides, non-methane hydrocarbons, solvents and other volatile organic compounds, arsenic, selenium, mercury, benzene, polycyclic aromatic hydrocarbons, lead, zinc, chromium, copper, nickel, cadmium, vanadium, etc.

5 The law sets a maximum size criterion, whereby only materials whose largest dimension does not exceed 125 millimetres are subject to the TGAP component. In contrast, extracted materials exceeding 125 millimetres in size are not subject to the tax.

6 Materials occurring naturally in the form of mineral grains or derived from crushed or fractured rock.

7 Natural sands or gravels and similar materials.

8 Decree 2007-491 of 29 March 2007 prohibiting the use of phosphates in certain detergents.

9 Companies liable for the TGAP must submit an electronic annual declaration (Form 2020-TGAP-SD) to the tax authority. This may coincide with the VAT return: the CA3 filed in April for companies under the standard quarterly regime, or the CA3 filed in May for companies under the standard monthly regime. For companies under the simplified real regime, the TGAP declaration aligns with the CA12 or CA12A return filed in May or within three months following the end of the financial year (if not aligned with the calendar year). In all other cases (e.g., non-VAT-registered companies), the deadline is 25 April.

10 Article 244 quater B of the General Tax Code.

11 Article 244 quater I of the General Tax Code.

12 The ceiling rises to €200 million for investments in regional aid zones and €350 million for investments in outermost regions.

13 Non-domestic water pollution charge, domestic water pollution charge, charge for the modernisation of sanitation networks, diffuse pollution charge, charge for the abstraction of water resources, charge for water storage during low-flow periods, charge for the protection of aquatic environments, etc.

14 Article L. 213-10-4 of the Environmental Code.

## Bruno Trescher

Bruno Trescher is a professor of public law at the University of Strasbourg. His research focuses on international and European taxation, as well as the evolution of public administration. He has published numerous articles in academic journals, addressing topics such as preferential taxation in France and the management of local public services. His work includes publications on tax sanctions and corporate taxation in Europe. He currently directs several academic programmes, including the master's degree in property law (*droit de l'immobilier*), the master's degree in economic and social administration (*administration économique et sociale*) and the master's degree in energy law and sustainable development (*gestion et droit des énergies et développement durable*). He also serves as director of the University Research Federation L'Europe en Mutation, where he coordinates interdisciplinary research on history, law and economics.

**REVIEWS**

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RESEÑAS

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## REVIEWS/RESEÑAS

# M. Castells. *La sociedad digital*. Madrid: Alianza Editorial, 2024

**Alba Taboada Villamarín**

Universidad Autónoma de Madrid, España  
alba.taboada@uam.es

Más de dos décadas después de teorizar la sociedad red, Castells regresa con *La sociedad digital*, un libro esperado en el que no solo revisita sus ideas originales, sino que las reinterpreta a la luz del presente. Ya en *The Network Society Revisited* (2023), el autor señalaba la necesidad de actualizar los fundamentos de su teoría para comprender las transformaciones contemporáneas. Su legado intelectual no solo permitió explicar la transición hacia una sociedad posindustrial, sino que también estableció las bases conceptuales de la sociedad de la información y el conocimiento, una noción que en los últimos años ha adquirido una relevancia indiscutible.

Muchos de los efectos que Castells anticipó en su obra —o al menos delineó sin pretensiones futuristas— se han materializado con una claridad sorprendente. Esta capacidad de observación y modelización ha convertido su trabajo en una referencia ineludible para comprender los procesos de transformación digital y su impacto en las estructuras sociales. No obstante, la acelerada evolución de las tecnologías de la información y la comunicación ha generado cambios vertiginosos, donde cada avance corre el riesgo de volverse obsoleto en poco tiempo. *La sociedad digital*, el libro que aquí reseñamos, surge precisamente para abordar este desfase.

El contenido del trabajo que tenemos entre manos, por tanto, puede considerarse una extensión actualizada de la estructura teórica que Castells formuló en la segunda mitad de los noventa en su trilogía original (*La Era de la Información*), donde definió la sociedad a partir de una morfología reticular y flexible. En la actual obra, el autor inicia su análisis con una presentación de datos macro que evidencian la alta penetración de internet y su uso generalizado en distintos ámbitos. Uno de los aspectos más relevantes es su énfasis en el respaldo empírico, que proporciona una visión detallada sobre el grado de digitalización de las sociedades contemporáneas.

Desde las primeras páginas, Castells justifica la pertinencia de su obra al señalar que, más que nunca, es posible confirmar las hipótesis que en los años noventa acompañaron la expansión de internet y las presunciones sobre las transformaciones sociales que esta traería. La tesis sostiene que la producción, el almacenamiento y el intercambio de información en entornos digitales configuran las formas de organización humana que llamamos sociedad.

Este enfoque, basado en un determinismo tecnológico moderado, ha estado presente a lo largo de su trayectoria y sigue vigente en *La sociedad digital*, aunque adaptado a las dinámicas actuales de transformación tecnológica. A lo largo de los diez capítulos que componen el libro, Castells traza un mapa conceptual en el que identifica los rasgos fundamentales de la sociedad digital y los principales desafíos que enfrenta.

Entre estos retos, Castells identifica: la comunicación y la desinformación en entornos digitales (capítulo 2), el problema de la privacidad y la consolidación del Estado de vigilancia (capítulo 3), la digitalización de los mercados financieros con especial énfasis en las criptomonedas (capítulo 4), el teletrabajo y sus implicaciones en la presión urbanística (capítulo 5), la incorporación de modelos generativos como ChatGPT en la educación (capítulo 6), la reconfiguración de la brecha digital en el contexto actual (capítulo 7), la revisión de los movimientos sociales en red (capítulo 8), la creciente polarización política en las redes sociales (capítulo 9) y la integración de la inteligencia artificial en los conflictos bélicos (capítulo 10).

Estos retos, algunos emergentes y otros en continuidad con los ya advertidos, están definidos, como señala el autor, por el avance acelerado de proyectos tecnológicos como la inteligencia artificial, la creciente importancia y ubicuidad de las redes sociales y la amplia relación entre digitalización y estructuras gubernamentales a gran escala. A ello se suma el desarrollo de la computación cuántica, que ha dejado de ser una posibilidad lejana para convertirse en una realidad cada vez más tangible. A lo largo del libro, Castells ejemplifica estos desafíos a través de casos que han tenido una gran resonancia mediática en la última década. Entre ellos, destaca la filtración masiva de información por parte de Edward Snowden, los movimientos sociales como los Indignados o la guerra en curso entre Ucrania y Rusia. También hace referencia a la pandemia del COVID-19, lo que le permite analizar en qué medida este evento ha contribuido a la consolidación de la sociedad digital y, a su vez, hasta qué punto la sociedad digital ha incidido en la gestión de la crisis sanitaria.

Como primer punto de advertencia, Castells señala que la concentración geográfica de las infraestructuras digitales plantea interrogantes fundamentales sobre la soberanía de los países. En un contexto donde tecnologías como la inteligencia artificial o el 5G juegan un papel clave en la reconfiguración del poder global, estas cuestiones adquieren una relevancia creciente. El autor subraya que el desenlace de esta transformación no dependerá únicamente del desarrollo tecnológico, sino, sobre todo, de las relaciones de poder que lo moldean.



El primer capítulo examina la evolución de los sistemas de comunicación en la era digital. Mientras que el siglo XX estuvo dominado por la comunicación de masas, caracterizada por mensajes unidireccionales emitidos por un número reducido de actores hacia una audiencia amplia, la progresiva expansión de las redes digitales ha dado lugar a un nuevo paradigma que Castells denomina autocomunicación de masas, concepto que desarrolla en el segundo capítulo. Aunque este modelo suele interpretarse como un avance democratizador, el autor matiza esta visión al señalar que la autonomía del sujeto comunicante es relativa. Su actividad está condicionada por las lógicas algorítmicas y comerciales que rigen las plataformas digitales. Castells observa cómo las redes sociales han superado en influencia a los medios tradicionales, integrando simultáneamente dinámicas locales y globales, formatos multimodales y modalidades de interacción tanto sincrónicas como asincrónicas.

En este capítulo, el sociólogo indaga en la aparición de nuevas formas de sociabilidad digital y cuestiona algunos mitos que se popularizaron en los años 2000 en torno a las redes sociales. A esta nueva configuración la denomina *sociabilidad 3.0*, caracterizada por un aumento de los lazos débiles y por la nostalgia de una supuesta sociabilidad «auténtica». Sin embargo, argumenta que los temores iniciales sobre la superficialidad de las relaciones digitales han resultado infundados. La interacción en línea y la sociabilidad cara a cara no se excluyen entre sí, sino que se complementan y refuerzan. Apoyándose en estudios científicos, Castells demuestra que el uso de redes sociales ha empoderado a colectivos históricamente marginados, como mujeres, minorías étnicas y personas dispersas geográficamente. Su análisis ofrece una visión más matizada sobre el impacto de la digitalización en la vida social, alejándose de los determinismos tecnológicos y reconociendo la agencia de los sujetos en la configuración de estos espacios.

En relación con la identidad digital, Castells desmonta la idea de que los usuarios ocultan su verdadera identidad tras nombres falsos. Por el contrario, las interacciones en línea funcionan como espacios de construcción y reafirmación de identidades sociales, impulsadas por la búsqueda de reconocimiento y comunidad. Incluso prácticas fundamentales como el cortejo y la formación de vínculos románticos han migrado al ámbito digital, adaptándose a nuevas dinámicas comunicativas.

Siguiendo esta línea, el autor examina el proceso de integración entre las grandes plataformas digitales y las industrias de comunicación. Empresas como Facebook, Google, Amazon y Microsoft se han consolidado como los principales distribuidores de contenido, desplazando a los medios tradicionales. Castells advierte sobre las implicaciones ideológicas que subyacen a la tecnocracia de estas empresas. Su discurso de innovación y neutralidad enmascara dinámicas de control y concentración de poder que reconfiguran el ecosistema informativo y limitan la autonomía de los usuarios en el entorno digital.

Uno de los efectos más problemáticos de estas transformaciones en la comunicación es la creciente crisis de desinformación y el fenómeno de las *fake news*, un tema que Castells analiza en detalle. La viralidad, el uso de bots, los algoritmos generativos de inteligencia artificial y la tendencia a amplificar los mensajes negativos han acelerado la propagación de información falsa.

El autor sugiere que este fenómeno ha alimentado una profecía autocumplida en la que el aumento de la desinformación refuerza la desconfianza en las instituciones modernas. No obstante, matiza que la incidencia de la desinformación varía según el nivel educativo y las diferencias sociopolíticas entre países, lo que indica que no se trata de un proceso uniforme, sino de un fenómeno condicionado por múltiples factores estructurales y culturales.

Los efectos de la digitalización en la comunicación y la información dan paso a un fenómeno aún más profundo, la creciente vigilancia digital y la erosión de la privacidad en el marco del capitalismo informacional, tema central del tercer capítulo. Castells examina casos emblemáticos de espionaje estatal, como el uso del software *Pegasus*, y denuncia la asimetría entre gobiernos y ciudadanos en el acceso y control de la información digital. Si bien el autor subraya la fuerte crítica ciudadana hacia estas prácticas, su argumentación carece de un respaldo empírico más sólido que refuerce esta afirmación. Además, se echa en falta la referencia a una de las sociólogas más relevantes en este campo, Shoshana Zuboff.

En el capítulo 4, Castells examina el impacto de la informática en las finanzas e introduce el concepto de autómata financiero para describir la creciente automatización de los mercados. Desde una perspectiva didáctica, explica el impacto de los cálculos digitalizados a gran velocidad en la economía contemporánea, especialmente en la compraventa de títulos derivados. Además, analiza el auge de las criptomonedas y su potencial de independencia frente a los gobiernos. Sin embargo, señala que, en la práctica, su uso parece orientarse principalmente a la evasión de impuestos. Aunque reconoce su capacidad disruptiva, concluye que su autonomía aún es limitada.

Retomando temas abordados en *La sociedad en red*, en el capítulo 5 Castells examina la contradicción entre el auge del teletrabajo y el crecimiento de la urbanización. La tesis de este capítulo resulta particularmente interesante, ya que, aunque inicialmente se esperaba que el teletrabajo descentralizara la población y fomentara la expansión hacia entornos rurales, en la práctica han emergido dos dinámicas opuestas: la concentración metropolitana y la descentralización intrametropolitana.

Estas dinámicas responden a varios factores. Por un lado, el teletrabajo aún no se ha consolidado completamente como modelo dominante, por otro, la permanencia en las ciudades no obedece exclusivamente a razones laborales, sino también al acceso a los servicios y oportunidades que ofrece el entorno urbano. Si bien el impacto del COVID-19 ha acelerado tanto la adopción del teletrabajo como ciertos procesos migratorios hacia áreas rurales, Castells sugiere que su desarrollo futuro dependerá de la capacidad de las ciudades para adaptarse a modelos híbridos de organización laboral.

El autor también introduce el concepto de nómada digital como una nueva forma de movilidad laboral en la era digital. Aunque su porcentaje dentro de la población activa sigue siendo reducido, su impacto es significativo. Suelen aportar un alto poder

adquisitivo a países con menor renta per cápita, lo que convierte a estos trabajadores en un activo económico para ciertas regiones y en un atractivo turístico que fomenta políticas destinadas a captar su presencia.

Superado el meridiano del libro, en el capítulo 6 Castells aborda uno de los temas de mayor trascendencia en los últimos años: la relación entre el aprendizaje humano, la enseñanza tradicional y el aprendizaje automatizado. Su análisis se centra en la educación formal y en cómo el uso de tecnologías digitales dentro del aula ha mostrado, en algunos casos, una correlación negativa con el rendimiento académico.

Un informe de la OCDE, citado en el libro, señala que la diferencia entre el aprendizaje en entornos digitales y el aprendizaje a través de libros de texto radica en la fiabilidad y la coherencia de las respuestas. Mientras que los libros impresos ofrecen contenidos verificados, la información en línea es más fragmentada y propensa a la desinformación. En este contexto, la introducción de ChatGPT en las aulas plantea nuevos desafíos educativos que requerirán estudios empíricos rigurosos para comprender sus efectos y desarrollar estrategias pedagógicas adecuadas.

En los capítulos 7, 8 y 9, Castells revisita algunos de los temas centrales que desarrolló en su trilogía sobre la era de la información y la sociedad en red, como la brecha digital, los movimientos sociales en red y la estabilización de las redes sociales digitales. En su análisis de la brecha digital, el autor explora su evolución en función del territorio, el género, la edad, la clase social y la etnicidad. Aunque las disparidades en el acceso a internet han disminuido en muchas regiones, persisten diferencias significativas en la capacidad de uso y aprovechamiento de las tecnologías digitales. Castells subraya que la brecha digital ya no se limita únicamente al acceso, sino que se ha desplazado hacia desigualdades en las habilidades digitales y en la posibilidad de transformar ese acceso en oportunidades dentro de la sociedad digital.

En relación con los movimientos sociales, Castells destaca la consolidación de los que él mismo teorizó como movimientos sociales en red, caracterizados por su estructura descentralizada y su capacidad de movilización a gran escala a través de plataformas digitales.

Por último, el autor aborda el fenómeno de la polarización política en redes sociales y sostiene que, aunque la polarización se intensifica en el entorno digital, su origen no es exclusivo de este espacio. Según su análisis, la polarización es un fenómeno que surge en el mundo *offline* y se refuerza en el ámbito digital a través de estructuras algorítmicas que amplifican la emocionalidad y la confrontación en la difusión de la información.

Además, Castells hace una breve incursión en las relaciones bélicas contemporáneas y en el modo en que la tecnología ha dado lugar a nuevas formas de ataque y resistencia militar (capítulo 10). Como ha ocurrido históricamente con los avances tecnológicos, los primeros desarrollos en computación cuántica han estado vinculados a aplicaciones militares, tanto para la defensa como para la ofensiva. El autor señala

que la guerra actual ha adoptado una nueva cultura, en la que las redes digitales se han convertido en una pantalla de comunicación directa desde el campo de batalla. No obstante, destaca que, pese a la sofisticación tecnológica, los procesos rudimentarios siguen desempeñando un papel crucial en los conflictos bélicos. Sin embargo, advierte que a mayor sofisticación tecnológica, mayor es el potencial de letalidad en los enfrentamientos.

El conjunto de estos capítulos ofrece una visión estructurada de la sociedad digital, concebida por el autor como una prolongación evolutiva de la sociedad en red, cuya morfología reticular se mantiene gracias a las tecnologías de la información y la comunicación. A diferencia de otras obras de Castells, este libro adopta un tono marcadamente divulgativo. Este recurso cumple una función clave al contextualizar eventos y proporcionar referencias accesibles para un público amplio, incluidos los sociólogos que abordan estas problemáticas desde distintas perspectivas. Más que un análisis conclusivo, la obra se presenta como una propuesta programática que invita a la sociología a afrontar los retos que impone la sociedad digital y a explorar nuevas tensiones entre la tecnología y la organización social.

## REVIEWS/RESEÑAS

# P. Burke. *Ignorancia. Una historia global*. Madrid: Alianza Ensayo, 2023

**Jorge Bolívar**

Universidad de Sevilla, España  
jorgutbol@alum.us.es

Puede parecer una paradoja que, tras una larga carrera dedicada al estudio histórico del conocimiento y su difusión, Peter Burke (Stanmore, Reino Unido, 1937) haya dedicado su ensayo más reciente al papel de la ignorancia en las sociedades humanas. Pero como el mismo autor explica en el prefacio, se trata de un devenir lógico: al explorar la sabiduría se expone la amplitud de lo que no se sabe, de la nesciencia, y se visualiza el fenómeno de la ignorancia como motor de la historia. Señala Burke que el análisis del conocimiento quedaría incompleto sin un examen de lo que se ignora, una conclusión derivada de su larga trayectoria como investigador. No hay que olvidar que Burke publicó su *Historia social del conocimiento: de Gutenberg a Diderot*, y la segunda parte, *Historia social del conocimiento: de la enciclopedia a Wikipedia*, hace ya 23 y 13 años respectivamente, y que *El polímata*, su obra sobre los sabios multidisciplinares, data de hace solo tres años<sup>1</sup>. Desde entonces el interés por la ausencia del conocimiento, como antítesis del conocimiento mismo, ha ido escalando en la labor académica de Burke. Por ejemplo, como antecedente del libro que ahora reseñamos se encuentra sin duda el seminario que impartió en 2021 en el Lund Centre for the History of Knowledge en la universidad sueca de Lund, junto a otro interesado en el estudio de la ignorancia, Lukas M. Verburgt. Existen además dos recientes artículos de Burke dedicados a la importancia de la ignorancia: «Introduction: Histories of Ignorance» en el *Journal for the History of Knowledge*, de 2021, y «History of Ignorance: a 21st Century Project», en la revista *Physis* del año 2022 (pp. 155-170). El paulatino interés de Burke en el papel histórico de la ignorancia no debe, pues, encontrarnos desprevenidos.

La primera precisión de Burke es que no hay una clase de ignorancia, sino que se trata de un concepto plural. Está la ignorancia de simplemente no saber que no se sabe, junto a la ignorancia de saber que no se sabe y la ignorancia del no querer saber. Cada uno de estos tipos tiene su propia casuística y sus consecuencias. El no saber que no se sabe es la ignorancia profunda, «la falta de conocimiento de la existencia de ciertos temas, incluyendo la carencia de los conceptos necesarios para plantear estas

preguntas» (p. 28). El saber que no se sabe supone un grado inferior de ignorancia, pues, afirma Burke, el sujeto es consciente de su falta de información: la ciencia, por ejemplo, ha avanzado gracias a buscar respuestas a los ignotos que se percibían como tales. Este segundo tipo de ignorancia, si va acompañada de la curiosidad, resulta en un motor positivo para la historia, «el esfuerzo por rellenar las nieblas conscientes del conocimiento» (p. 122). El tercer tipo de ignorancia especificado por Burke es el más presente, señala, en la actualidad: no querer saber, o rechazar aquello que puede saberse, pero se contrapone a nuestros valores o creencias. El autor no culpa a cada individuo de esta última actitud: en un mundo de sobreinformación como el siglo XXI resulta complejo seleccionar qué fuentes son fiables o no. Cerrar los ojos a la realidad que no se adecua a nuestros esquemas mentales es hoy más fácil que nunca, pues gracias a la enorme difusión de las nuevas tecnologías comunicativas siempre se pueden encontrar argumentos dialécticos que reafirmen nuestra ignorancia. La extensión actual de las *fake news*, sobre las que Burke precisa que no se trata de un fenómeno nuevo sino de gran tradición histórica en la comunicación social, se debe precisamente a la sobredosis de información y a la ausencia de una capacidad crítica individual («fallo de filtrado», p. 19). Como señala el autor, una extrema certeza también lleva a la ignorancia, y la posverdad se arma con estos elementos: «La humanidad como un todo es más sabia que nunca, pero la mayoría de los individuos saben poco más de lo que sabían sus antepasados» (p. 63).

Tras la presentación del tema (y su confesión de las dudas que le acarrea, pues un libro sobre la ignorancia, dice, bien podría tener las páginas en blanco), Burke ha elegido dividir el ensayo en dos partes, una primera sobre los mecanismos de implantación de la ignorancia en la sociedad, y otra sobre las consecuencias del fenómeno. Con una erudición asequible únicamente a un académico de tan larga carrera, el autor señala que la extensión de la ignorancia no es siempre responsabilidad de alguien, pues obstáculos naturales, físicos o cognitivos eximen a la humanidad de alcanzar ciertos grados de conocimiento; e incluso, señala, cualquier sabiduría nueva supone la exclusión de saberes más antiguos. Pero también explica las «ventajas» de la ignorancia, entendida como medio de poder. En concreto, Burke especifica tres áreas donde la ignorancia ha sido especialmente útil para el control social: la religión, la ciencia y la geografía. En la segunda parte, dedicada a las consecuencias de la nesciencia, profundiza aún más, y añade la supremacía racial, el machismo al mantener a la mujer en el desconocimiento y la estratificación por clases, al conjunto de actitudes de poder que han favorecido la escasa extensión de la sabiduría. El factor de crítica histórica añade una dimensión más al libro, pues la ignorancia se muestra como una herramienta útil que ha cumplido un papel esencial en el mantenimiento de estructuras sociales dominadas por élites.

El autor muestra una larga lista de ejemplos en cada una de las dos partes del volumen, en un ejercicio que demuestra su enorme bagaje cultural. Sin embargo, dentro de un ensayo dotado de gran consistencia, la enumeración continua de casos concretos sin profundizar en ninguno se muestra como la parte menos sólida. Hubiéramos agradecido que algunos de los ejemplos citados como consecuencias históricas de la ignorancia dispusiesen de un análisis más pormenorizado, aun a costa de citar

menos casos. Sin embargo, esta orientación hace que el libro ofrezca dos niveles de lectura: uno adecuado para el mundo académico, pues lo que Burke intenta es abrir el camino a un nuevo campo de investigación, el papel social de la nesciencia, y otro para el lector ocasional y no especializado, que disfrutará de las anécdotas y casos concretos expuestos por el autor. Esto hace que el libro sea atractivo como lectura para el público general, lo cual no es un mérito menor al plantear de manera didáctica y accesible un tema tan árido como el estudio histórico del no-saber.

En teoría social de la comunicación, las implicaciones del libro que reseñamos son enormes por cuanto supone introducir un elemento disruptivo en la cadena Emisor → Mensaje → Receptor: la capacidad o voluntad del receptor de comprender el mensaje en el sentido que el emisor desea. La historia cultural, de la que este autor es uno de los grandes representantes, ya ha añadido numerosos factores de distorsión en la comunicación social que antes no se tenían en cuenta. Ahora Burke incorpora la ignorancia a esta lista de condicionantes. La situación personal del individuo se consagra como clave para el exitoso cumplimiento del proceso comunicativo. Si el receptor carece de la información previa necesaria para comprender la nueva información, el mensaje no tendrá utilidad pues no alcanzará su meta comunicativa; del mismo modo, aunque el receptor disponga de la competencia simbólica precisa para comprender, sus creencias, convicciones e ideología condicionarán su nivel de aceptación del mensaje, que puede ir de la credulidad acrítica a la recepción efectiva o al rechazo del contenido. Las condiciones individuales del receptor, pues, resultan esenciales en la difusión social de información y, como Burke señala, no podemos obviar que el grado de ignorancia, voluntaria o no (el «no saber que no se sabe» o el «no querer saber»), es un elemento a tener en cuenta. El receptor ha dejado de ser un sujeto pasivo para pasar a componente activo en el proceso de transmisión colectiva de mensajes. La ignorancia como herramienta del poder también entra en juego, tanto en la limitación del contenido de los mensajes como en la eliminación directa de los mismos mediante la censura o el secreto. Burke ofrece en este libro una montaña de ejemplos que fortalecen tales posiciones.

Si la primera parte del libro ahonda en lo que, también paradójicamente, podríamos llamar epistemología de la ignorancia, la segunda parte se centra en las consecuencias de la nesciencia. Más concretamente, en la ignorancia del poder y de las élites, las que tienen la capacidad de ejecutar acciones sociales decisivas. El acceso al conocimiento por parte de las élites les asegura determinado grado de control, pero no el acierto. Ya sea porque la información se pierde en la cadena de gobierno (por ejemplo, en el caso de las erróneas decisiones de Hitler en la invasión de la Unión Soviética, donde manejaba divisiones que ya habían sido destruidas), o porque el sesgo emocional del gobernante impide una correcta evaluación de la información (un caso que cita Burke es la colonización británica de la India, donde los prejuicios raciales impidieron una valoración real de la situación), o bien simplemente por ignorancia de primer grado («no saber que no se sabe», como en el ejemplo de la conducta del Antiguo Régimen justo antes de la Revolución francesa), la ignorancia se convierte en un motor decisivo del devenir histórico, iluminando por qué se tomaron decisiones que sin tener en cuenta este elemento serían inexplicables. En

este sentido, y de forma elegante, Burke nos recuerda que estudiar la historia es el mejor instrumento para no repetir errores anteriores. El desconocimiento global del pasado empuja a reproducir actitudes irresponsables y a reincidir en equívocos catastróficos. Es destacable que el autor incluya a la política española reciente en estos casos de amnesia histórica que llevan a la ignorancia y a la toma de decisiones erróneas: según él, el olvido de lo que ocurrió en la Guerra Civil, la dictadura franquista y la posterior transición está llevando a nuestro país a la fractura social. La unión de las fuerzas políticas y sindicales en un objetivo común fue entonces decisiva para una consecución exitosa del edificio democrático; pero la amnesia (un proceso de ignorancia sobrevenida) y el progresivo desconocimiento de esa etapa histórica en las generaciones más jóvenes, e incluso entre las élites políticas, están llevando, según Burke, a una debilitación sociopolítica de nuestro entorno nacional. «Ahora que prácticamente nadie recuerda la Guerra Civil, la democracia española parece cada vez más frágil» (p. 365).

Esta idea de Burke de la retroalimentación de la ignorancia, que de instrumento de control social llega a mutar en una trampa para las propias élites que gestionan el conocimiento, resulta sumamente interesante al elevar la nesciencia a factor clave de las dinámicas históricas. Lo que entendemos por racionalidad supone la toma de decisiones lógicas basadas en una información correctamente analizada; pero si la información es incorrecta o el análisis se halla mediatizado por elementos como los prejuicios, la soberbia o un nuevo tipo de ignorancia (la de «no saber que se sabe», es decir, ignorar el conocimiento que sí poseemos), las decisiones serán irracionales, y por tanto no correspondientes a lo que esperaríamos de un proceso histórico dirigido por seres humanos poderosos sin esta clase de interferencias. La ignorancia (o «las ignorancias», como prefiere enunciar Burke) aparece así como un actor histórico de primer orden que explica caminos erróneos y en muchas ocasiones de consecuencias mortíferas. En esta línea, la reflexión de Burke lleva a plantearnos la confusión del actual momento histórico, donde la ignorancia ya no proviene de la falta de información, sino de su exceso y de la resistencia de la población de acceder a tal cantidad de información en su conjunto. La sobredosis de información de nuestros días configura una burbuja de ignorancia incluso entre los individuos considerados cultos («expertos en un campo pero ignorantes de todo lo demás», p. 282) y no digamos ya entre la población de bajo o medio nivel educativo, donde priman las opiniones sobre la adquisición de conocimientos. En este sentido, la información está más disponible que nunca gracias a las nuevas tecnologías y a la apertura social del papel del emisor. Hoy todos podemos ser emisores y con una capacidad históricamente inédita de difusión de nuestros mensajes, pero el acceso a toda esa información se ve relegado simplemente por la necesidad del receptor de elegir sus fuentes en el maremágnum de conocimiento disponible. La mayoría de este conocimiento es lo que Burke llama «material redundante» que, razona, «ahoga la información relevante» (p. 244).

Una historia de la ignorancia escrita de forma tan erudita no es la única paradoja del libro, que está muy lejos de la otra opción, la de escribir sobre la ignorancia con hojas en blanco. Al contrario, Peter Burke elige el camino de azotar la selva de la historia con un machete argumental que permita abrir claros en la confusión



actual, y que puede llevarnos también a una interpretación nueva de los procesos sociales que tengan en cuenta el factor del ignorante, sea gobernante o gobernado. Este ensayo consolida la historiografía de la ignorancia y, como el propio autor pide, augura una profundización en un campo de estudios académicos hasta ahora poco transitado.

## Notas

- 1 Peter Burke, *Historia social del conocimiento: de Gutenberg a Diderot*, Paidós Ibérica, 2002. Peter Burke, *Historia social del conocimiento: de la enciclopedia a Wikipedia*, Paidós, 2012. Peter Burke, *El polímata*, Alianza Editorial, 2022.



## REVIEWS/RESEÑAS

# L. Ayuso y J. M. García (coords.). *Políticas familiares en España ante los nuevos retos del sistema del bienestar.* Sevilla: Fundación Centro de Estudios Andaluces, 2024

**Pablo Redondo Mora**

Universidad de Zaragoza, España  
predondo@unizar.es

El libro *Políticas familiares en España ante los nuevos retos del sistema del bienestar*, coordinado por Luis Ayuso Sánchez y José Manuel García Moreno, es una obra pionera en el estudio de las políticas familiares en España. Esta publicación, que recoge las aportaciones y reflexiones de algunos de los científicos sociales y juristas de referencia en el estudio de las políticas familiares en nuestro país, es el segundo volumen publicado en la colección Enfoques del Centro de Estudios Andaluces, destinada a difundir el resultado académico de seminarios, jornadas científicas, etc. Concretamente, este libro es fruto de las ponencias que sus autores impartieron en el curso de verano «Políticas familiares para afrontar los nuevos retos del sistema de bienestar», organizado por el Centro de Estudios Andaluces y la Universidad Internacional de Andalucía (UNIA) en su sede de Baeza en septiembre de 2021.

La obra pone de manifiesto la necesidad urgente de desarrollar políticas familiares explícitas y coherentes que respondan a la diversidad de las familias españolas y a los retos de una sociedad en constante transformación. A lo largo de sus doce capítulos, distribuidos en cuatro bloques, más la introducción y conclusiones, esta obra permite al lector profundizar desde una perspectiva multidisciplinar en la situación de las políticas familiares en España y los desafíos que deben afrontar.

Las políticas familiares son un campo de estudio con un amplio potencial de desarrollo desde las ciencias sociales españolas. También las políticas familiares ocupan un lugar secundario en el ámbito político e institucional, contando estas con un escaso nivel de desarrollo en comparación con otros países europeos.

Pese a su escaso desarrollo, las evidencias científicas recogidas en esta obra demuestran que las políticas familiares son fundamentales para hacer frente a un conjunto de problemas sociales que suponen un reto para el Estado de bienestar. Nos referimos a las dificultades de conciliación de la vida familiar, la igualdad de los roles de género en el ámbito familiar, el descenso de la fecundidad, el envejecimiento de la población, el aumento de la soledad, la atención de las necesidades de los jóvenes, los efectos de la digitalización sobre las relaciones sociales, etc.

Bajo el título «Reflexionar sobre las políticas familiares en clave temporal», el primer bloque ofrece una perspectiva histórica y evolutiva de las políticas familiares en España. En el primer capítulo, Julio Iglesias de Ussel reflexiona sobre el pasado, presente y futuro de las políticas familiares. En su análisis destaca que, a pesar de que la familia es percibida como un actor fundamental para el bienestar social, sus intereses no suelen estar presentes en la agenda pública, dando lugar a una falta de desarrollo de las políticas familiares en nuestro país. En este sentido, el profesor Iglesias de Ussel identifica una serie de obstáculos que dificultan el desarrollo de políticas familiares en España y reflexiona sobre los elementos y condiciones necesarios para fortalecer este campo de la política pública en nuestro país. Finalmente, el autor ofrece unas orientaciones y líneas de actuación en el futuro.

En el segundo capítulo, «Transición demográfica, igualdad de género y políticas públicas en contexto: el caso de la custodia compartida», Lluís Flaquer defiende la importancia de que las políticas familiares contemplen el contexto en el que son desarrolladas y su conexión con procesos de cambio más amplios. Flaquer argumenta que, a menudo, las transformaciones se producen indirectamente a través de avances en otras políticas públicas. Como ejemplo de ello, presenta las conclusiones de una investigación en la que demuestra cómo el desarrollo de la custodia compartida en Europa es muy dispar entre países dependiendo, entre otros factores, de su puntuación en el índice de igualdad de género. Es decir, el progreso hacia la igualdad de género influye positivamente en el avance hacia la custodia compartida.

Bajo el título «Fundamentos jurídicos, diseño técnico y evaluación de las políticas familiares», el segundo bloque explora los aspectos legales, metodológicos y de evaluación de las políticas familiares.

En el tercer capítulo del libro, Salomé Adroher Biosca reflexiona sobre los fundamentos jurídicos de las políticas familiares, analizando el marco jurídico general de las políticas familiares en España y sus desafíos. Este capítulo ahonda en la definición de política familiar y sobre quiénes son sus destinatarios, reflexionando sobre la propia concepción jurídica de la familia en la sociedad actual. También aborda la cuestión de la distribución de competencias en materia de política familiar entre Administraciones, sector privado y tercer sector en el contexto europeo y español, donde señala la existencia de amplias desigualdades territoriales. Concluye reflexionando sobre la finalidad de las políticas familiares y el papel de cada uno de los actores implicados para apoyar a las familias.

Yolanda García Calvente, en el capítulo «Tributo y familia: contexto y fundamento», examina la política fiscal como uno de los principales instrumentos de la política familiar. La autora analiza la función extrafiscal del tributo y la consideración de la familia como posible objeto de esta. Sitúa las políticas familiares españolas en el contexto de la Unión Europea, destacando que no existe una política familiar europea homogénea. García Calvente se centra en los beneficios fiscales por hijos a cargo como un indicador revelador de la relación entre los países y la institución familiar. Concluye resaltando que España sigue siendo uno de los países con menor gasto social en familia e infancia, a pesar del aumento de la desigualdad y la pobreza infantil, por lo que es necesario repensar y analizar globalmente las políticas familiares y, especialmente, la política fiscal.

El capítulo quinto del libro, «La especialización de los juzgados civiles en infancia, familia y capacidad: hacia la igualdad de las familias ante la ley», está escrito por Belén Ureña Carazo. La autora comienza señalando que el aumento de la diversidad familiar ha traído consigo una mayor complejidad de las relaciones familiares y un aumento de los asuntos de familia tramitados en los juzgados. Es por ello que resulta necesario contar con juzgados especializados que atiendan los conflictos familiares de forma ágil y profesional. Si bien existen juzgados de familia, su especialización en la materia es incompleta, pues, aunque se les atribuyen competencias exclusivas en materia de familia, los jueces y magistrados que sirven tales órganos no poseen una especialización en familia, inexistente en la carrera judicial. Según Ureña Carazo, esta especialización debe abarcar tres aspectos: conocimientos técnicos en normativa jurídica nacional e internacional sobre infancia, familia y capacidad; la adquisición de habilidades transversales como empatía e inteligencia emocional; y la gestión de la intervención de equipos técnicos y servicios auxiliares. En definitiva, el capítulo concluye que la creación de una jurisdicción auténticamente especializada en familia contribuiría al respeto del principio constitucional de igualdad ante la ley y a la adopción de resoluciones más acertadas gracias a un equipo multidisciplinar de profesionales altamente cualificados.

El tercer bloque trata sobre las políticas familiares dirigidas a la infancia, la conciliación y la corresponsabilidad. Comienza con el capítulo de Ferrán Casas Aznar sobre el bienestar infantil y su medición. Este capítulo recoge los principales resultados del proyecto *Children's Worlds*, que recoge datos sobre las vidas de niños y niñas de distintos países desde su propia perspectiva y sobre la base de sus propias evaluaciones. Uno de los principales hallazgos de este proyecto es que los niños, niñas y adolescentes experimentan un mayor bienestar subjetivo cuando sienten que los adultos les escuchan y les tienen en cuenta en los distintos contextos de su vida cotidiana. En conclusión, la disponibilidad de indicadores sobre el bienestar subjetivo de la población infantil y adolescente permite identificar qué aspectos de su vida se deben mejorar desde las políticas públicas.

En el séptimo capítulo, Gerardo Meil Landwerlin analiza de qué forma y en qué medida los permisos parentales constituyen un recurso útil para facilitar a las familias la

conciliación de su vida familiar y laboral. Para ello, comienza exponiendo la reciente evolución de los permisos parentales, que han ido ampliándose con el objetivo de impulsar la corresponsabilidad en el cuidado por parte de todos los miembros de la unidad familiar. También discute las características de estos permisos en España y su papel para favorecer una mayor implicación de los padres en las responsabilidades familiares. Los resultados del análisis presentado concluyen que estos permisos impulsan una mayor implicación de los padres en los cuidados de los niños y en las tareas domésticas, lo que contribuye a un reparto más igualitario de las responsabilidades familiares y a la reducción de las desigualdades de género en las relaciones familiares.

Anna Escobedo Caparros, en «Gobernanza multinivel de las políticas familiares y de conciliación: los servicios de atención y educación infantil», defiende que las políticas de conciliación son fundamentales para mejorar la calidad de vida de los ciudadanos, promover la igualdad de género, apoyar a las familias en el cumplimiento de sus funciones y favorecer un entorno laboral más justo y eficiente. Entre las políticas de conciliación, pone el foco sobre las escuelas infantiles 0-3 en España, centrando el debate sobre las competencias de los distintos niveles de la Administración, su financiación, equidad, calidad y adecuación a las necesidades de conciliación. También plantea la necesidad de articular mejor los servicios y las licencias retribuidas, especialmente durante el primer año de vida del menor. Para finalizar, subraya los retos futuros dentro del enfoque de los Primeros 1.000 días de la infancia que plantea el Libro Blanco para un Nuevo Marco Nacional Para Mejorar el Apoyo y la Protección a las Familias, como la transición hacia sistemas articulados que atiendan a la diversidad familiar y la monitorización y evaluación comparada de las políticas.

Por su parte, Consuelo León Llorente se centra en el teletrabajo, la digitalización y las diferencias de género en un contexto de transformación de las políticas familiares, que se vio intensificado por la pandemia de la COVID-19. El objetivo de este capítulo es analizar cómo afectan estos cambios a las diferencias de género en el ámbito laboral y familiar. Para ello, comienza contextualizando las políticas empresariales de flexibilidad antes de la pandemia y las desigualdades de género en el ámbito laboral. Posteriormente, se centra en analizar los efectos que las políticas de conciliación aplicadas masivamente durante la pandemia de COVID-19, especialmente el teletrabajo, tuvieron sobre las personas trabajadoras con responsabilidades familiares. Los resultados de este análisis apuntan a que el teletrabajo permite al individuo dedicar más tiempo a la familia. Sin embargo, también dificulta la separación del tiempo destinado al empleo del dedicado a las tareas de cuidado, pudiendo generar una sobrecarga de responsabilidades e incrementar el grado de conflictos y las tensiones.

El último bloque está destinado al análisis de políticas familiares dirigidas a diferentes etapas del ciclo vital familiar. José Manuel Jiménez-Cabello se centra en las políticas familiares dirigidas al bienestar de los menores, analizando específicamente la evolución de la custodia compartida en España. El capítulo ofrece una

contextualización de la legislación sobre custodia compartida en Europa, la cual es muy diversa, centrándose posteriormente en el caso de España y las comunidades autónomas que cuentan con una regulación propia al respecto. En líneas generales, observa que la custodia compartida ha ido ganando presencia durante los años, aunque en mayor medida en las CC. AA. que cuentan con un ordenamiento jurídico propio. Ante estas diferencias territoriales, Jiménez-Cabello señala un problema de fondo, y es que los jueces, psicólogos forenses y abogados tienden a optar por un régimen de exclusividad de la madre basándose en creencias y prejuicios sociales. Ante esta situación, es necesario dotar a los profesionales de herramientas y procedimientos que faciliten su toma de decisiones de la manera más objetiva posible.

En el capítulo 11, Almudena Moreno Mínguez aborda las políticas destinadas a la juventud de 19 a 29 años en España. La autora reflexiona sobre la escasa atención que este colectivo ha recibido desde las Administraciones públicas españolas y se analiza en qué medida las políticas públicas están respondiendo a sus necesidades. Este colectivo ha sido uno de los más castigados por las consecuencias de las sucesivas crisis que ha experimentado el país en las últimas décadas. En este contexto, España es uno de los países de Europa donde la juventud tiene mayores dificultades para completar su transición a la vida adulta. Ante la precariedad y la falta de protección social a la que se encuentran expuestos los jóvenes, se ha extendido un discurso pesimista en torno a ser joven en España que alimenta la desafección y la desconfianza de este colectivo hacia las instituciones. Los datos aportados en este capítulo evidencian la necesidad de intensificar la protección social y la participación política de la juventud. Todo ello es fundamental para generar confianza entre los jóvenes, fortalecer sus relaciones con lo público y garantizar la solidaridad intergeneracional.

En el último capítulo, «Nuevos escenarios. La soledad senior: realidades, retos y políticas familiares», Pedro Sánchez Vera señala algunos retos que el envejecimiento de la población plantea a las políticas familiares. Uno de los principales desafíos que señala es el aumento de la soledad no deseada. Aunque este problema es intergeneracional, afecta mayormente a la población senior. Además, frente a la reducción de las redes familiares, se espera que la generación actual de jóvenes se enfrente a un futuro de más años de vejez en soledad, con una red familiar reducida y relaciones sociales de menor intensidad. Es por ello que la soledad es un problema que requiere atención por parte de las políticas familiares. Frente a la soledad, también están surgiendo nuevas formas de convivencia que plantean nuevos escenarios a tener en cuenta desde las políticas públicas, como la mayor presencia de mascotas en los núcleos familiares o la ruptura y formación de parejas en edades avanzadas. Además, Sánchez Vera destaca otros retos que también merecen atención por parte de las políticas familiares, como el papel de las herencias en un contexto de precariedad de los jóvenes, haciendo hincapié en los casos de descapitalización de personas jubiladas que adelantan la herencia a descendientes que atraviesan situaciones de vulnerabilidad socioeconómica. Finalmente, también destaca la necesidad de mejorar la eficiencia de las residencias de mayores y de impulsar alternativas al modelo de residencia tradicional.

Finalmente, en las conclusiones, José Manuel García Moreno, Luis Ayuso Sánchez y Guadalupe Quintana Gutiérrez hacen un repaso de las principales contribuciones recogidas en este libro y reafirman la necesidad de impulsar e incluir las políticas familiares en las agendas públicas en España, especialmente ante los nuevos desafíos de la sociedad digital y las tendencias de cambio social.



**REVIEWS/RESEÑAS**

**P. Rodríguez-Modroño (coord.).**  
*Desigualdades de género en las plataformas digitales de trabajo.* Sevilla:  
Fundación Centro de Estudios Andaluces, 2024

**Rafael Ibáñez Rojo**

Universidad Autónoma de Madrid, España  
rafael.ibanez@uam.es

La expansión de las plataformas digitales ha reconfigurado de forma sustancial las lógicas de organización del trabajo, transformando una parte significativa de las relaciones laborales, de las condiciones de empleo y de los marcos normativos que institucionalizan la relación salarial. Esta transformación, lejos de ser neutral, se inscribe en estructuras sociales preexistentes que producen y reproducen desigualdades, entre ellas las de género (Eubanks, 2021). El análisis de estas mutaciones en el trabajo es el objetivo central de esta obra, que reúne una serie de capítulos que, si bien conservan una relativa autonomía, comparten una mirada común: la necesidad de analizar cómo las plataformas digitales no solo reproducen, sino que también intensifican formas históricas de precarización laboral, especialmente en sectores altamente feminizados como los cuidados o la limpieza. Desde una perspectiva interseccional, los diferentes capítulos examinan la forma en que las relaciones de género se entrecruzan con otras dimensiones de la desigualdad, como la clase o el estatus migratorio, mostrando cómo estas plataformas actúan como nuevos dispositivos de segmentación y explotación laboral.

El libro arranca ya desde el contexto de la última aceleración en el desarrollo de las plataformas que desencadenó la crisis del COVID. Y desde una mirada que ha abandonado la inocencia respecto a las posibilidades abiertas por la flexibilidad y la autonomía de las nuevas formas empresariales y de organización del trabajo (Shor, 2020). Desde la materialidad con la que se abordan los cambios en esta obra, podemos comprender cómo la economía de los datos basada en algoritmos se ha convertido en un nuevo espacio de rentabilización del capital, si bien es posible que tenga una vida (rentable) tan corta o limitada como las que han ido alimentado una dinámica económica de ciclos cada vez más cortos en las últimas décadas. Pues los análisis empíricos contenidos en este trabajo clarifican el carácter extractivo,

basado en la intensificación del trabajo, de estas nuevas dinámicas y, por ello mismo, ayudan a hacer visibles los límites inherentes al tipo de relaciones sociales que generan y reproducen.

Desde los años ochenta del pasado siglo la sociedad occidental ha ido modificando sus discursos en torno a las nuevas tecnologías y la progresiva robotización y automatización de los procesos. Pero la perspectiva de género permite visibilizar y analizar uno de los límites sociales y materiales fundamentales de las idealizaciones inherentes a los discursos más habituales en torno a las nuevas tecnologías, el límite que impone el bienestar en los cuidados, ese conjunto de relaciones de sustento en las que las dinámicas habituales de descomposición de tareas y automatización han sido históricamente poco relevantes. Ya otros trabajos nos han hecho tomar conciencia de los límites ecológicos actuales de la *inteligencia artificial* (Crawford, 2025), sin embargo, desde el punto de vista de la relación salarial es pertinente enmarcar los cambios en la evolución de largo plazo, para mostrar también cómo el sueño de una producción automatizada ya estaba presente en la obra de Charles Babbage (Pasquinelli, 2023). Pero las dinámicas de control que dicha dinámica implica (Zuboff y Santos, 2020) adoptarán formas concretas, como siempre ha ocurrido en nuestra historia, según la resistencia que impongan los límites materiales y sociales a su desarrollo.

Por ello, frente a las perspectivas más idealistas centradas en el desarrollo de la inteligencia artificial, el hecho de considerar como objeto de análisis las *plataformas digitales* permite comprender de forma mucho más acertada el carácter de las relaciones materiales y sociales específicas que sostienen las nuevas formas de rentabilización del capital. En particular, tal y como se indica en uno de los capítulos del libro, la *crisis social de los cuidados* (con el conjunto de dinámicas de cambio familiar y cultural, evolución de las políticas públicas y procesos de privatización, etc.) ha fijado los amplios límites en los que se mueve la expansión del trabajo de plataformas en determinados servicios. Por otra parte, la perspectiva de género permite un análisis de las ambigüedades del impacto que cualquier nueva tecnología puede generar en función de las fracturas sociales sobre las que opera. De manera específica, toda «tecnología» aparentemente neutra genera un impacto diferencial sobre la estructura de la desigualdad, por lo que diferentes capítulos del libro abordan cómo la dinámica abstracta de la flexibilidad (que supuestamente favorece el trabajo a través de las plataformas) implica consecuencias muy diversas y contradictorias de cara a fortalecer o debilitar la posición de muchas mujeres trabajadoras. Podríamos tratar de sintetizar las tres cuestiones fundamentales que son abordadas en el conjunto de trabajos de esta obra colectiva:

1. El análisis de los efectos contradictorios que la supuesta flexibilidad que la economía de las plataformas introduce en la organización de los tiempos del trabajo. Desde perspectivas compartidas, las autoras del texto asumen que cualquier innovación y mutación en las dinámicas empresariales y del mercado de trabajo actúa sobre estructuras ya masculinizadas o feminizadas, y sus impactos deben ser analizados en cada caso concreto.

2. En segundo lugar, otro eje de análisis en el libro (central tan solo en algunos capítulos) es la evolución de la normativa jurídica y el esfuerzo de clasificación de las diferentes plataformas, subrayando la singularidad de las plataformas de cuidados, frente a las más conocidas, analizadas e incluso reguladas, plataformas de reparo y de transporte de pasajeros. En particular, es una intención explícita del libro tratar de superar el sesgo de género en los estudios sobre la *uberización* de la economía, al separar el trabajo de plataforma que se realiza en lugares concretos (normalmente domicilios del cliente) frente al trabajo móvil (de entregas a domicilio o transporte) y el trabajo completamente en línea.

3. Y, sobre todo, de forma complementaria a través de varios capítulos, el libro contribuye a explicar las consecuencias y los límites específicos con los que opera la economía de las plataformas al enfrentarse con ese espacio no computable del cuidado y del sustento humano que tiene que ver con lo afectivo y lo emocional. Las autoras muestran cómo en el sector de cuidados, una supuesta descualificación y falta de profesionalidad, junto con la frecuente indefinición de los límites de las tareas (por ejemplo, entre la limpieza y el cuidado), contribuye a intensificar la carga de trabajo y a colocar a las trabajadoras en un lugar muy débil para negociar y controlar sus condiciones de trabajo.

El volumen se estructura en seis capítulos, precedidos por una introducción a cargo de las editoras, que enmarca el objeto del libro en los debates actuales sobre economía de plataformas y género.

Es quizá el primer capítulo (elaborado por Julia Espinosa-Fajardo, Paula Rodríguez-Modroño y Purificación López-Igual) el más singular dentro del conjunto, pues se trata de un análisis de contenido de las iniciativas parlamentarias relativas a la revolución industrial 4.0 durante las legislaturas XIV (2019–2023) y XII (2016–2019). En total, las autoras identifican 48 documentos, tomados como base para un estudio exploratorio orientado a identificar la incorporación progresiva en la agenda política de las problemáticas más relevantes ligadas al impacto en las relaciones de género de las dinámicas generales de la *digitalización*. El capítulo denuncia la falta de un diagnóstico riguroso, de una agenda incapaz de anticipar los cambios y de elaborar medidas específicas que aborden la precariedad estructural y la feminización de ciertos sectores.

El segundo capítulo, escrito por Francisca Pereyra y Ariela Micha, analiza el acceso de las mujeres a trabajos tradicionalmente masculinizados, como el reparto y el transporte urbano, a través de plataformas activas en la ciudad de Buenos Aires como Uber, Rappi o Glovo. Frente al resto de contribuciones del libro, centradas en el trabajo doméstico y de cuidado, las autoras abordan aquí la tensión entre la promoción de la «autonomía» y el «emprendimiento» en servicios muy masculinizados, y las prácticas cotidianas de discriminación y violencia de las que son objeto la minoría de mujeres que participa en ellos. El análisis realizado se nutre de una investigación empírica de largo recorrido, donde se han combinado la realización de 70 entrevistas y el análisis de los datos de una encuesta con una muestra de 750 casos (300 de tra-

bajadores de reparto y 450 de conductores de Uber, incluyendo en ambos casos una cuota intencional de 150 mujeres).

El tercer capítulo, redactado por Meike Brodersen, Anastasia Joukovsky, Elief Vandevenne y Jens Doms, analiza el caso de las plataformas de trabajo doméstico en Bélgica. El capítulo pone especial atención en las estrategias de formalización parcial promovidas por algunas plataformas que, si bien ofrecen ciertos derechos laborales, continúan reproduciendo una situación de subordinación y escaso poder negociador. El capítulo se nutre, como en el caso anterior, de la realización de 39 entrevistas (dos tercios de ellas a mujeres) a trabajadores y trabajadoras de plataformas de servicios a domicilio, incorporando situaciones con diferentes niveles de dependencia y con una mayor heterogeneidad en los sectores investigados. Las entrevistas realizadas revelan que las tareas más feminizadas se siguen realizando en un marco que proyecta informalidad y reciprocidad, y que amplifica habitualmente los espacios de incertidumbre sobre las expectativas vinculadas a cada relación, en un contexto que habitualmente perjudica a la trabajadora. En el trabajo doméstico y de cuidados el trabajo suele alargarse, expandirse en varios sentidos, desdibujándose sus fronteras, exigiendo disponibilidad afectiva, dificultando la capacidad negociadora de la trabajadora (pues accede a espacios íntimos y personales) y facilitando así incrementos en la intensidad del trabajo.

El cuarto capítulo, elaborado por Paula Rodríguez-Modroño, Astrid Agenjo Calderón y Purificación López-Igual, busca avanzar en el conocimiento de la feminización y racialización del trabajo de las plataformas de cuidados y servicios domésticos. El capítulo arranca con un esfuerzo por clasificar e identificar las diferentes formas de intermediación y sus consecuencias, desde un *Marketplace* (que solamente pone en contacto trabajadora y cliente a cambio de una tarifa) a las plataformas bajo demanda y aquellas otras que funcionan como agencias digitales de colocación. Al margen de las diferencias entre unas y otras, el trabajo constata cómo la capacidad expansiva de las plataformas las ha hecho capaces de construir un contexto en el que resulta muy difícil trabajar al margen de ellas. Las diferencias entre unas y otras plataformas es en parte un reflejo del funcionamiento y uso social habitual de cualquier algoritmo. Orientado al ahorro de costes, el algoritmo se utiliza de forma sistemática para los espacios más masivos y subordinados (tanto desde el punto de vista de las trabajadoras como de los clientes), mientras que los servicios de élite siempre seguirán lógicas más personalizadas y filtros «humanos» que garanticen información de calidad en los procesos de selección (O'Neil, 2017). Así, las plataformas especializadas en servicios puntuales (Cleanzy, Clintu, Domestic24, MyPoppins) exigen requisitos mínimos y no suelen realizar ni siquiera entrevista personal a las trabajadoras, de la misma forma que permiten funcionar con informalidad máxima, sin contratación, etc.

El capítulo quinto, escrito por Olivia Blanchard, complementa al anterior al centrarse en las condiciones laborales de las trabajadoras que prestan cuidados a domicilio mediante plataformas. Se analiza el perfil de las trabajadoras (en su mayoría mujeres migrantes, muchas en situación irregular) y se describen las formas de precariedad

que se reproducen: extensión de jornadas, bajos salarios, inestabilidad contractual y escasa protección social. Se destaca que la digitalización no ha supuesto una mejora en las condiciones laborales, sino más bien una racionalización de la precariedad. A pesar del discurso de la «flexibilidad» y la «autonomía», las plataformas imponen condiciones unilaterales, establecen jerarquías invisibles y refuerzan la informalidad estructural del sector. El capítulo constata la evidencia sobre el perfil feminizado del sector con los datos oficiales de la Seguridad Social, así como el elevado porcentaje de población extranjera. Y subraya la singularidad del caso español, pues diferentes estudios indican que es uno de los países con mayor porcentaje de trabajadores de plataforma, donde parece haberse instalado un modelo «low cost» de asistencia domiciliaria que resulta coherente con un Estado muy débil en su capacidad de intervención.

Finalmente, el último capítulo, escrito por Irene Galí Magallón, adopta una perspectiva laboralista y analiza la problemática de las plataformas Clintu y MyPoppins desde el punto de vista jurídico, estableciendo un paralelismo con la problemática jurídica que plantearon los *riders* a los órganos jurisdiccionales. El trabajo repasa jurisprudencia reciente y retoma las cuestiones de la fijación de horarios, de las tarifas y de la comunicación con el cliente para mostrar la ausencia de autonomía de las trabajadoras de estas plataformas. Algo que confirman también los mecanismos de control (como las formas telemáticas de «fichar») y de fijación de las retribuciones.

Junto con toda la información derivada de la riqueza del material empírico que aportan varios capítulos del libro, este trabajo tiene el potencial de alimentar el debate y las políticas públicas orientadas a regular este nuevo ecosistema laboral. En un momento en que las plataformas se consolidan como actores económicos de primer orden, este tipo de análisis resulta imprescindible para comprender las transformaciones en curso y sus efectos diferenciales sobre las trabajadoras. En este sentido, el análisis de las relaciones entre las desigualdades de género y las nuevas formas de organización laboral resulta especialmente fértil, y permite observar tanto los efectos negativos como algunas posibilidades emergentes en sectores como el del reparto o la conducción.

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