Library Philosophy and Practice (e-journal)   Libraries at University of Nebraska-Lincoln

2021

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Abstract: In the absence of research aimed to measure the bibliodiversity of the Spanish publishing sector through indicators, the general objective of this work is to determine quantitatively whether the Spanish publishing sector is bibliodiverse. The specific goals are the following: a) analyze those necessary conditions to promote bibliodiversity, b) identify the main variables that conform bibliodiversity, and c) measure the degree of bibliodiversity. From the study of the contributions of the academic literature, this research forms an analysis model with the main necessary conditions of the bibliodiversity of the Spanish publishing sector: deconcentration, digital transformation, and glocalization. After reflecting on bibliodiversity, this research builds a theoretical analysis model to study the different variables that define bibliodiversity (linguistic, publishing companies, formats, thematic, and gender) and apply the various bibliodiversity indicators (Simpson, Shanon-Weaver and Pielou). Through a synthetic general bibliodiversity index, the different indices obtained for each variable considered in the research can be grouped.The research concludes that the Spanish publishing sector is bibliodiverse.

Keywords: Publishing sector; bibliodiversity; deconcentration; digital transformation; bibliodiversity indexes.

JEL Classification: L80, L82, Z11

1. Introduction

Cultural diversity is a concept loaded with interpretations related, among others, to identities, minorities, languages, immigration, or integration, and studied and analyzed from very different fields of knowledge (Benhamou & Peltier, 2007; Kawashima, 2011; Val, 2017). The UNESCO (2005) points out that cultural diversity refers to the multiplicity of ways in which the cultures of groups express themselves. Cultural diversity manifests not only in the various means of expression, transmission, and enriching of the cultural heritage of humanity but also through different modes of artistic creation, production, dissemination, distribution, and enjoyment of cultural expressions whatever the media and technologies used. Cultural diversity is the outcome of a mix of three basic properties -variety, balance, and disparity- of cultural products, their ways of availability, and consumption.

These three dimensions, not necessarily connected, depend on each other when interpreting them. (Ranaivoson, 2007). Ultimately, cultural diversity is a multidimensional concept and attempts to measure it must be based on life science criteria to explain variety, balance, and disparity (Benhamou & Peltier, 2007).

Bibliodiversity is the cultural diversity applied to the world of books (Hawthorne, 2014). Although large publishing groups, with their massive production of books, contribute to the emergence of a specific publishing offer, academic literature links the idea of bibliodiversity to the independent publishers' activity (Mihal, 2013). In the 21st century, independent publishers have become one of the most important cultural phenomena on a world scale (Gallego, 2020). The proliferation of this publishing model meant the opening of alternative literary markets, which put a brake on the oligopolistic and obsolescent practices from large publishing companies (De Diego, 2015; Sapiro, 2009). Generally speaking, an independent publisher focuses on a quality book catalog without neglecting profitability. It pursues self-sustainability and does not depend on any capital outside its publishing activity (Locane, 2019).

The following work aims to explore the conditions that allow the development of bibliodiversity, as well as to identify its main variables, to obtain a measurement of it, and to be able to determine, whether or not, the Spanish publishing sector is bibliodiverse.

A reflection on the evolution of the Spanish publishing sector in the last decade involves focusing on three different and close-in-time processes that portray it almost entirely and will influence the conformation of its possible bibliodiversity (Magadán and Rivas 2021; 2020). The first of these processes would consist of the profuse emergence of independent publishers, which establishes an opposition to the concentration processes (Magadán and Rivas 2021). The second process has relation with the transition and digital transformation (Magadán and Rivas 2019). Finally, the third process has to do with the weight of glocalization within the internationalization of the publishing sector (Roudometof 2016; Fernandez 2019; Magadán and Rivas 2021).

In the case of the Spanish edition, two transnational conglomerates control the book market: the Bertelsmann group, with German capital, and the Planeta group, with Spanish capital (Magadán and Rivas 2021). The two companies mentioned are the only ones that guarantee a high-impact transnational circulation (Gallego 2020).

In cultural economics, measuring cultural diversity is an almost forgotten subject (Benhamou & Peltier, 2007), and the assessment of diversity usually focuses on a single dimension, generally viewed through the number of titles offered (Benhamou and Peltier 2007). This simple perspective leads to assuming a multidimensional conception of bibliodiversity inspired by research carried out in biology.

The general objective of this work is to determine if the Spanish publishing sector is bibliodiverse. The specific goal is threefold: firstly, analyze those factors that are a necessary condition to promote bibliodiversity, such as deconcentration, digital transformation, and internationalization; secondly, identify the main variables that conform bibliodiversity and thirdly, measure the degree of bibliodiversity.

2. Context

The Spanish publishing sector is the one that generates the highest wealth within the cultural industries. The total income of Spanish publishers during 2019 reached 2,420.64 million euros and generated 12,754 direct jobs (FGEE, 2020). Added to this is the employment associated with the rest of the activities incorporated into the book chain. The Spanish publishing sector is, de facto, a significant source of jobs. Direct employment increased from year to year until 2008, when, due to the Great Crisis, it began to decrease until 2015, a turning point in which a slightly increasing trend of job creation seems to emerge in the Spanish publishing sector.

The positive trade balances in the last years underline the strengthening of the Spanish publishing sector. The turnover from the export of books in 2019 touched 529,967 million euros (FEDECALI, 2020), with Mexico as the leading market. European exports exceeded 26 million euros in 2019 (FEDECALI 2020). Regarding those destined for America, the value of exports was around 143.5 million euros (FEDECALI 2020).

During 2019 the Spanish publishing production was developed by 3,169 publishing agents (MCD, 2020). However, in recent years the abandonment of the publishing activity is much higher than the new incorporations because technological changes are challenging existing business models to date and prompting companies to re-examine their product portfolios and core competencies, which implies that many companies decided to leave the market and not readapt the new changes (Magadán and Rivas 2021).

3. Theoretical framework

Hereafter, this section shows the theoretical framework, and the subsequent analysis to verify the possible existence of a consolidated bibliodiversity in the Spanish publishing sector is set out below. For that purpose, this research develops an analytical model, starting from the notion of bibliodiversity. The model incorporates the necessary conditions to promote the said concept and the main variables that define it. Finally, various biodiversity indices are adapted to assess the degree of bibliodiversity of the Spanish publishing sector.

3.1. Bibliodiversity

A group of Chilean publishers in the 1990s initially coined the term bibliodiversity, and they defined it as cultural diversity applied to the world of books and made available to readers (Hawthorne, 2016).

Bibliodiversity contributes to the development of a prosperous and healthy ecosocial cultural system (Hawthorne, 2014; IAIP, 2014) and implies the manifestation of plurality and publishing richness in its maximum expression: of languages, of looks, of voices, of approaches, of genres, sensitivities and editing criteria, among many others (Hawthorne, 2016; Martire, 2021; Shea, 2018).

Bibliodiversity allows preserving and strengthening plurality and the circulation of ideas, guaranteeing a participation space for knowledge producers and institutions.

3.2. Analysis model

Starting from the previous analysis on the idea of bibliodiversity, the following model, without the intention of being exhaustive, indicates the necessary conditions for its fostering, as well as the main variables that configure it (see Figure 1).

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Figure 1. Bibliodiversity analysis model
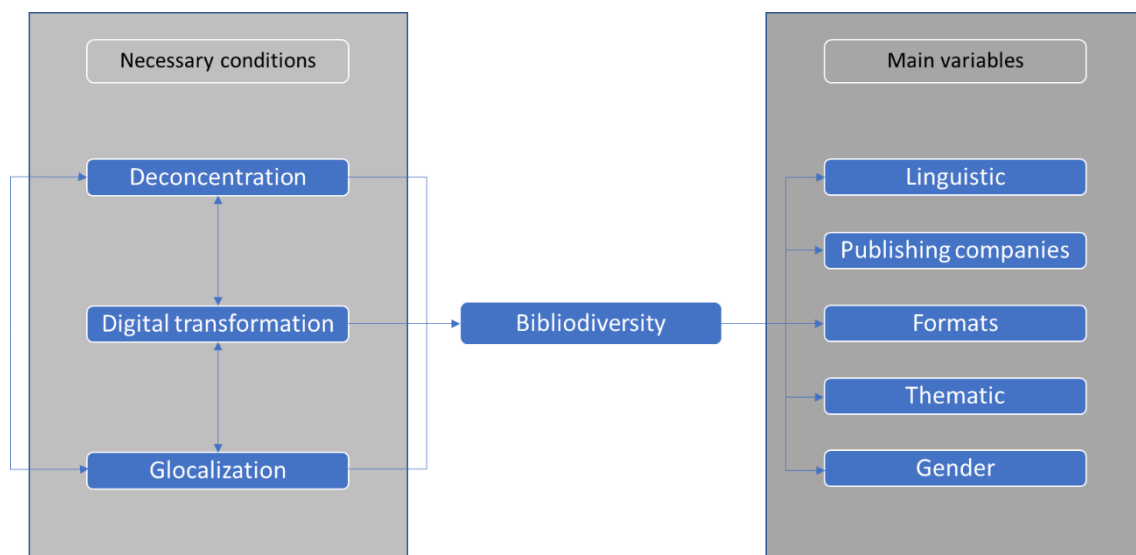
Source: own elaboration.

3.2.1. Necessary conditions

3.2.1.1. Deconcentration

Although traditionally, market concentration marked the Spanish publishing activity, high competition and deconcentration effect emerged in the last years (MCD, 2020). This deconcentration and competition imply the opening of a space for independent publishers to position themselves (Magadán and Rivas 2021).

Between 1996 and 2019, the new panorama of the sector is outlining a trend to the extremes: on the one hand, the large publishing groups take strategic positions through acquisitions and mergers (horizontal integration) or bets decided to transform their business models with platforms digital distribution and marketing (vertical forward integration); on the other, a myriad of new small publishing initiatives appear on the scene, in the heat of the digital transformation (Magadán and Rivas 2019). The result is the atomization of the publishing sector that makes it increasingly competitive and deepens the deconcentration effect (Magadán and Rivas 2021).

Since the 1980s, the concentration process of publishing companies has intensified through acquisitions by larger groups of other small and medium-sized labels with attractive publishing funds, thus replacing traditional business cannibalization with horizontal integration. In this way, large conglomerates with an international presence got hold of publishing rights over works with potential in their projection (Magadán and Rivas 2021).

The emergence of new small-size publishing houses arose concurrently with the concentration process among the large ones. In Spain, publishers are emerging with novel proposals, either: a) to cover small market niches neglected by large publishers, b) to focus on marginal genres, or c) to the very publishing of books as an aesthetic object- artistic (Magadán and Rivas 2021).

3.2.1.2. Digital transformation

The Spanish publishing sector is undergoing profound changes due to the digital transition, both in terms of the product that it offers and, in the production and distribution processes to

the market, impacting the entire value chain. These changes challenge existing business models to date and prompt companies to reexamine their product portfolios and core competencies (Magadán and Rivas 2019).

The Spanish publishing sector has known how to adapt to the technological changes and continuous innovations that have taken place during the last two decades: from desktop publishing processes, through digital printing processes without the intermediation of photosensitive films, continuing with the printing processes known as "direct to plate" (computer to plate), up to digital printing on demand (POD) and continuing with the publication of digital content on different supports, among others. At the same time, Spanish publishers have been readapting their respective business models to duly integrate the changes derived from the innovations adopted (De Andrés, 2010; Magadán & Rivas, 2019).

The digital transformation reaches the publishing sector by opening up new possibilities: a) in the media on which to publish a book, b) in the display modes of digital publications -through an e-book reader, computer or smartphones, among others-, c) in classic renewed formats as is the case of the audiobook, d) in how to organize the production processes in a publishing company, e) in the publishing promotion through the Internet and social networks, f) in publishing distribution, and g) in the definition of new business models (Magadán and Rivas 2019).

Nowadays, it is not possible to understand the Spanish publishing sector without connecting process and product innovation. On the one hand, Spanish publishing companies develop new products, such as e-books or audiobooks, among others but, concurrently, improve book production processes –both on paper and electronic format-, adding new features such as augmented reality or printing on demand, thus integrating design and manufacturing technologies (Magadán and Rivas 2019).

3.2.1.3. Glocalization

Although the internationalization of the publishing market is not new, it has accelerated considerably in the last decade (Magadán and Rivas 2021). This process stands out for a growing concentration of stamps acquired in transnational purchase operations or mergers, which implies a reordering of the world book market, highlighting the fragility of the publishing industries of countries with weak cultural policies for the book (Fernandez, 2019)). However, this internationalization, combined with digital transformation, provides an opportunity to promote independent publishers and their new business models (Magadán and Rivas 2021).

The internationalization of Spanish publishers was initially driven by the search for new markets and by linguistic and cultural advantages (Fernandez, 2012), which explains the direct investment made to locate and maintain their Latin American subsidiaries. It is necessary to underline that, within the possible channels of the presence of Spanish publishers in foreign markets, the use of subsidiaries was a modality only available to large companies such as Grupo Santillana, Grupo Planeta, Grupo Océano, Urano, SM, Malpaso, or Grupo Zeta, among others (Magadán and Rivas 2021).

This Americanization strategy was a process that began at the end of the 19th century, motivated by the exhaustion of the domestic market and the need to find new commercialization spaces in foreign markets, especially in Latin America, benefiting from the said linguistic and cultural advantages. In the middle of the last century, between the 60s and

70s, the internationalization of Spanish publishing houses already reached significant levels of penetration (Fernandez 2012).

Until the 1970s, these subsidiaries limited their activity to distributing books published in Spain, but later they began to publish in Latin America (Fernandez 2012). The solution to the economic crisis of 1982 consolidated this strategy as the most appropriate for publishing companies with a large volume of business in Latin America by allowing them to settle definitively in foreign markets, producing at local prices, introducing authors and national themes in their catalogs, and inserting itself into public and private distribution networks (Magadán and Rivas 2021). Local publishing subsidiaries allowed a total adaptation to the different country demands (Fernandez 2012; Magadán and Rivas 2021). It is crucial to highlight that Latin America is not a single market but a puzzle of independent book markets to which publishers must adapt (Nadal & García, 2005).

The independent publishing companies did not renounce to position themselves in Latin America, and the formulas applied to do it were mainly three: distribution, sale of rights, and co-publishing (Magadán and Rivas 2021).

3.2.2. Main variables

3.2.2.1. Linguistic bibliodiversity

Thanks to linguistic bibliodiversity, minority languages are preserved and kept alive concerning another dominant one in a sociocultural system (Hawthorne 2016). In Spain, alongside Spanish as the leading and ruling language, other official languages such as Galician, Euskera, or Catalan coexist, in addition to a good number of non-official languages and dialects that are part of both the collective and local heritage and are a sign of identity for its speakers (Alonso, 2021; De Miguel & Buitrago, 2009). In addition to publishing in the country's languages (official and unofficial), Spanish publishers work with other languages such as English or French, among others.

3.2.2.2. Bibliodiversity in publishing companies

Bibliodiversity in publishing companies supposes the existence of independent publishers whose production is the basis for promoting other variables that makeup bibliodiversity, such as the plurality of formats and topics in the overall production (Berger, 2021; IAIP, 2014).

As mentioned above, deconcentration defines the Spanish publishing sector, and it is possible to statistically verify the emergence of small-size independent publishers with a varied production in themes and formats (Gallego, 2019; Gómez & Hellín, 2019; Magadán & Rivas, 2021).

3.2.2.3. Bibliodiversity of formats

The diversity of book formats is part of the variables that define bibliodiversity (Mihal, 2013; Sánchez, 2017). The Spanish publishing sector manages different options: book on paper, e-book, or audiobook, among others, but with very uneven participation in publishing production (Magadán and Rivas 2020).

3.2.2.4. Thematic bibliodiversity

Thematic bibliodiversity has been commonly approached in the context of bibliodiversity management, in general (Mihal 2013). This research considered the thematic classification from the Overview of the Spanish Edition of Books 2019 (MCD 2020).

3.2.2.5. Gender bibliodiversity

Gender bibliodiversity reflects the political, social, and cultural transition towards a more egalitarian space where the feminine, in the broadest sense of the expression, progressively occupies the place that corresponds to it (Hawthorne, 2014; IAIP, 2014; Tille, 2017). In Spain, women lead the reading indices, theater, show audiences, and their presence grows both in the publishing and bookseller world and in cultural institutions (Acción Cultural Española, 2021). These facts, a priori, should boost the Gender bibliodiversity in the Spanish publishing sector.

3.3. Measure bibliodiversity

Given the evident analogy between the concepts of bibliodiversity and biodiversity, it is possible to use those instruments of Ecology dedicated to measuring the degree of biodiversity to determine if the Spanish publishing sector is bibliodiverse.

Among the classic biodiversity indicators and most used in Ecology are, among others, the following: a) the Simpson index (Simpson, 1949), b) the Simpson diversity index (Simpson 1949), c) the Simpson reciprocal index (Simpson 1949), d) the Shanon-Weaver index (Shannon & Weaver, 1949) and e) the Pielou uniformity index (Pielou, 1969).

3.3.1. Simpson index

The Simpson index was the first diversity index used in Ecology. The Simpson index is derived from probability theory and measures the probability of finding two individuals of the same species in two successive 'extractions' at random without 'replacement' (Simpson 1949). The mathematical formulation, based on the Simpson index, and applied in this research is as follows:

$$D = \frac{\sum_{i=1}^{S} n_i(n_i - 1)}{N(N - 1)} \; [1]$$

Where S represents the number of species, n_i is the number of organisms from species i, and N is the total number of organisms of all species.

The value of the D index varies between 0 (maximum diversity) and 1 (minimum diversity).

In this research, the D index will be calculated for each of the four variables considered in the analysis model (see graph 1): linguistic diversity, diversity of publishing companies, diversity of supports, and thematic diversity, making explicit the nature and values of S, as well as the statistical sources used to quantify the different values of n_i in each of the five variables mentioned above.

3.3.2. Simpson diversity index

Simpson diversity index is the one that results from a simple mathematical transformation that allows obtaining a positively correlated datum with diversity (Simpson 1949):

$$S_D = 1 - D \ [2]$$

3.3.3. Simpson reciprocal index

The Simpson reciprocal index is the inverse of the Simpson index (Simpson 1949):

$$S_R = \frac{1}{D} \ [3]$$

What makes it possible to compare the uniformity between species of different habitats, the greater or lesser dominance of some species in the habitats considered, and the greater or lesser competition for the habitat space (no overlapping of niches).

In the context of this research, this index would be helpful in a comparison between publishing industries in different countries.

3.3.4. Shanon-Weaver index

The Shanon-Weaver Index (H) is based on information theory and measures the information content per sign of a message composed of S classes of discrete symbols whose probabilities of occurrence are $p_i \ ... \ p_s$ (Shannon and Weaver 1949). It is probably the most frequently used in community ecology.

In an ecological context, as an index of diversity, it measures the information content per individual in samples obtained at random from a 'large' community of which we know the total number of species (S). Diversity is helpful as a measure of uncertainty to predict to which species belongs an individual chosen at random from a sample of S species and N individuals will belong.

The mathematical formulation applied in this investigation starts from the following expression of the H index:

$$H = -\sum_{i=1}^{S} p_i \ln p_i \ [4]$$

Where S represents the number of species, p_i is the proportion of organisms from species i (n_i) concerning the total number of organisms of all species (N), that is: $n_i \ / \ N$.

The value of the H index varies between 0 (minimum diversity) and $Ln \ (S)$ (maximum diversity).

3.3.5. Pielou uniformity index

The Pielou uniformity index measures the proportion of the diversity observed about the maximum one expected. Its value varies from 0 to 1: the value 0 corresponds to the absence of uniformity in the presence of different species, while the value 1 corresponds to situations where all the species are equally abundant (Pielou 1969). It is one of the most used indices to perform this calculation, and its formula is the following:

$$J = \frac{H}{\ln S} \ [5]$$

4. Findings

For the development of this section, we have relied on data from, mainly, secondary information sources of a public nature, such as the following: a) The Overview of the Spanish Edition of Books, which has been prepared since 1988 by the Subdirectorate General for Publications of the Ministry of Culture, allows to obtain a relevant source of information that will allow knowing, analyze and assess the reality of the publishing sector in Spain, and b) The Survey of Cultural Habits and Practices is a publication produced by the Statistics Division of the Ministry of Education, Culture and Sports that analyzes the cultural habits of the Spanish population aged 15 and over and dedicates one of its sections to the reading and libraries.

Below are the results obtained from the application of the indices defined in the previous section.

4.1. Linguistic bibliodiversity

This research considered the 15 languages of current publishing in Spain as base categories to measure the linguistic bibliodiversity of the Spanish publishing sector, according to the Overview of the Spanish Edition of Books. Table 1 shows from 2010 to 2019 -the latest year for which data are available- the linguistic categories, published titles, the relative and quadratic weights, and the product of the relative one by the respective Neperian logarithm, necessary to determine the different indices. The last five columns summarize the different values obtained for each of the indices considered.

The results obtained from the three Simpson indices show that the Spanish publishing sector is relatively little linguistically bibliodiverse. This relativity is evident since the Simpson index (D) is somewhat closer to 1 than 0 but much closer to 0.5. The Simpson diversity index (S_D) confirms this position, while the Simpson reciprocal index (S_R) value points to high competition between categories (languages) to occupy a larger space in the market. The Shanon-Weaver (H) index more strongly emphasizes the lack of specific bibliodiversity from the linguistic perspective, given that the value obtained is far from the maximum possible value obtained through the natural logarithm of 15, that is, 2.71. The Pielou uniformity index (J) underlines this absence of specific diversity due to its value points to a loud lack of uniformity in the weight of the various linguistic categories and a significant dominance of the Spanish language.

Regarding linguistic bibliodiversity, the data show strong stability in the evolution of the Simpson index (D) in the last decade, underlining the absence of significant alterations in the Spanish publishing sector.

Table 1. Linguistic bibliodiversity evolution

LANGUAGES	2010	Pi	Pi2	Piln[Pi]	2011	Pi	Pi2	Piln[Pi]	2012	Pi	Pi2	Piln[Pi]	2013	Pi	Pi2	Piln[Pi]	2014	Pi	Pi2	Piln[Pi]
Castilian	90939	0.818	0.670	-0.164	90813	0.801	0.642	-0.177	83079	0.814	0.662	-0.168	70220	0.810	0.656	-0.171	62506	0.809	0.654	-0.172
Catalan	10748	0.097	0.009	-0.226	12836	0.113	0.013	-0.247	9326	0.091	0.008	-0.219	7920	0.091	0.008	-0.219	6485	0.084	0.007	-0.208
Valencian	1492	0.013	0	-0.058	1310	0.012	0	-0.052	1487	0.015	0	-0.062	1128	0.013	0	-0.056	1005	0.013	0	-0.056
Galician	2544	0.023	0.001	-0.086	2130	0.019	0	-0.075	1621	0.016	0	-0.066	1426	0.016	0	-0.068	1439	0.019	0	-0.074
Basque	1852	0.017	0	-0.068	1901	0.017	0	-0.069	1810	0.018	0	-0.071	1396	0.016	0	-0.066	1126	0.015	0	-0.062
Asturian	41	0	0	-0.003	98	0.001	0	-0.006	65	0.001	0	-0.005	77	0.001	0	-0.006	67	0.001	0	-0.006
Aragonese	14	0	0	-0.001	17	0	0	-0.001	8	0	0	-0.001	6	0	0	-0.001	6	0	0	-0.001
Aranese	11	0	0	-0.001	3	0	0	0	12	0	0	-0.001	3	0	0	0	9	0	0	-0.001
English	1882	0.017	0	-0.069	2348	0.021	0	-0.08	2236	0.022	0.001	-0.084	2517	0.029	0.001	-0.103	2716	0.035	0.001	-0.118
Portuguese	409	0.004	0	-0.021	719	0.006	0	-0.032	1006	0.01	0	-0.045	757	0.009	0	-0.041	943	0.012	0	-0.054
French	687	0.006	0	-0.031	661	0.006	0	-0.03	886	0.009	0	-0.041	865	0.010	0	-0.046	587	0.008	0	-0.037
Italian	130	0.001	0	-0.008	155	0.001	0	-0.009	112	0.001	0	-0.007	75	0.001	0	-0.006	172	0.002	0	-0.014
German	156	0.001	0	-0.009	165	0.002	0	-0.009	205	0.002	0	-0.012	136	0.002	0	-0.010	86	0.001	0	-0.008
Russian	37	0	0	-0.003	67	0.001	0	-0.004	119	0.001	0	-0.008	92	0.001	0	-0.007	51	0.001	0	-0.005
Other languages	186	0.002	0	-0.011	98	0.001	0	-0.006	114	0.001	0	-0.008	69	0.001	0	-0.006	111	0.001	0	-0.009
Number of categories (S)	15				15				15				15				15			
Simpson index (D)	**0.680**				**0.656**				**0.672**				**0.666**				**0.663**			
Simpson diversity index (SD)	**0.320**				**0.344**				**0.328**				**0.334**				**0.337**			
Simpson reciprocal index (SR)	**1.471**				**1.524**				**1.488**				**1.502**				**1.508**			
Shannon-Weaver index (H)	**0.759**				**0.798**				**0.798**				**0.806**				**0.824**			
Pielou uniformity index (J)	**0.280**				**0.295**				**0.295**				**0.298**				**0.304**			

Table 1. Linguistic bibliodiversity evolution (continued)

LANGUAGES	2015	P_i	P_i^2	$P_i$ln[P_i]	2016	P_i	P_i^2	$P_i$ln[P_i]	2017	P_i	P_i^2	$P_i$ln[P_i]	2018	P_i	P_i^2	$P_i$ln[P_i]	2019	P_i	P_i^2	$P_i$ln[P_i]
Castilian	62526	0.804	0.646	-0.176	67212	0.797	0.635	-0.181	71530	0.812	00.659	-0.169	65990	0.831	0.69	-0.154	72921	0.825	0.681	-0.158
Catalan	7346	0.094	0.009	-0.223	7873	0.093	0.009	-0.221	9702	0.110	0.012	-0.243	6676	0.084	0.007	-0.208	6978	0.079	0.006	-0.2
Valencian	1228	0.016	0	-0.065	629	0.008	0	-0.036	723	0.008	0	-0.039	818	0.01	0	-0.047	1299	0.015	0	-0.062
Galician	1394	0.018	0	-0.072	1211	0.014	0	-0.061	1288	0.015	0	-0.062	1260	0.016	0	-0.066	1254	0.014	0	-0.06
Basque	1222	0.016	0	-0.065	1644	0.02	0	-0.077	1430	0.016	0	-0.067	1116	0.014	0	-0.06	1254	0.014	0	-0.06
Asturian	46	0.001	0	-0.004	38	0.001	0	-0.003	40	0.001	0	-0.003	70	0.001	0	-0.006	59	0.001	0	-0.005
Aragonese	7	0	0	-0.001	14	0	0	-0.001	14	0	0	-0.001	19	0	0	-0.002	11	0	0	-0.001
Aranese	12	0	0	-0.001	14	0	0	-0.001	9	0	0	-0.001	5	0	0	-0.001	6	0	0	-0.001
English	2647	0.034	0.001	-0.115	3390	0.04	0.002	-0.129	2110	0.024	0.001	-0.089	2038	0.026	0.001	-0.094	2800	0.032	0.001	-0.109
Portuguese	751	0.01	0	-0.045	1113	0.013	0	-0.057	713	0.008	0	-0.039	720	0.009	0	-0.043	829	0.009	0	-0.044
French	399	0.005	0	-0.027	920	0.011	0	-0.049	314	0.004	0	-0.02	353	0.004	0	-0.024	665	0.008	0	-0.037
Italian	82	0.001	0	-0.007	100	0.001	0	-0.008	76	0.001	0	-0.006	196	0.003	0	-0.015	99	0.001	0	-0.008
German	73	0.001	0	-0.006	93	0.001	0	-0.007	63	0.001	0	-0.005	79	0.001	0	-0.007	41	0.001	0	-0.004
Russian	12	0	0	-0.001	19	0	0	-0.002	5	0	0	-0.001	14	0	0	-0.001	19	0	0	-0.002
Other languages	70	0.001	0	-0.006	95	0.001	0	-0.008	119	0.001	0	-0.009	100	0.001	0	-0.008	108	0.001	0	-0.008
Number of categories (S)	15				15				15				15				15			
Simpson index (D)	**0.657**				**0.646**				**0.672**				**0.698**				**0.689**			
Simpson diversity index (SD)	**0.343**				**0.354**				**0.328**				**0.302**				**0.311**			
Simpson reciprocal index (SR)	**1.522**				**1.548**				**1.488**				**1.433**				**1.451**			
Shannon-Weaver index (H)	**0.816**				**0.844**				**0.755**				**0.736**				**0.76**			
Pielou uniformity index (J)	**0.301**				**0.312**				**0.279**				**0.272**				**0.281**			

Source: own elaboration.

4.2. Bibliodiversity of publishing companies

This research considered the 14 categories of publishers by the number of titles published, according to the Overview of the Spanish Edition of Books, to determine the bibliodiversity of publishing companies. Table 2 shows from 2010 to 2019 -the latest year for which data are available- the intervals of publication of titles, the number of publishers found in each category, as well as the relative and quadratic weights and the product of the relative one by the respective natural logarithm, necessary to determine the different indices. The last five rows summarize the different values obtained for each one of them.

The results obtained from the application of the three Simpson indices of Simpson show that the Spanish publishing sector enjoys a great bibliodiversity of publishing companies, given that the value of the Simpson index (D) is significantly closer to 0 than 1.

The Simpson diversity index (S_D) underlines the high bibliodiversity of publishing companies with its positive correlation. The Simpson reciprocal index (S_R) points to less competition among categories (publishers) for occupying more space in the market, given the specificity and stability of the niches or market segments. The Shanon-Weaver index (H) affects the marked specific bibliodiversity from the publishing companies' perspective since the value obtained is closer to the maximum possible value -the natural logarithm of 14 (2.64)- than the minimum value (0). The Pielou uniformity index (J) underlines this notorious specific diversity, whose value shows a significant uniformity in the weight of a good part of the various publishing companies' categories. These results are proof of the deconcentration of the Spanish publishing sector, which has resulted in the appearance of a good number of small and medium-sized independent publishers.

Regarding the bibliodiversity of publishing companies, the data show strong stability in the evolution of the Simpson index (D), although with a very slight tendency to lose bibliodiversity of publishing companies due to the disappearance of small publishers that have not been able to overcome the Great Crisis and adaptation to technical changes in the sector.

Table 2. Bibliodiversity evolution of publishing companies

Publishing companies' classification by annual title production	2010	P_i	P_i^2	$P_i\ln[P_i]$	2011	P_i	P_i^2	$P_i\ln[P_i]$	2012	P_i	P_i^2	$P_i\ln[P_i]$	2013	P_i	P_i^2	$P_i\ln[P_i]$	2014	P_i	P_i^2	$P_i\ln[P_i]$
More than 700 books	20	0.006	0	-0.030	24	0.007	0	-0.034	19	0.006	0	-0.030	10	0.003	0	-0.019	16	0.005	0	-0.027
699 to 500 books	10	0.003	0	-0.017	13	0.004	0	-0.021	11	0.004	0	-0.020	17	0.006	0	-0.029	9	0.003	0	-0.017
499 to 400 books	15	0.004	0	-0.024	6	0.002	0	-0.011	8	0.003	0	-0.015	7	0.002	0	-0.014	9	0.003	0	-0.017
399 to 300 books	18	0.005	0	-0.028	20	0.006	0	-0.030	20	0.006	0	-0.032	15	0.005	0	-0.026	17	0.006	0	-0.028
299 to 200 books	26	0.008	0	-0.037	37	0.011	0	-0.048	36	0.011	0	-0.051	28	0.009	0	-0.043	24	0.008	0	-0.037
From 199 to 100 books	116	0.034	0.001	-0.116	114	0.033	0.001	-0.112	92	0.029	0.001	-0.102	99	0.032	0.001	-0.110	94	0.03	0.001	-0.106
99 to 50 books	202	0.060	0.004	-0.168	191	0.055	0.003	-0.159	172	0.054	0.003	-0.158	145	0.047	0.002	-0.144	165	0.053	0.003	-0.156
49 to 40 books	74	0.022	0.001	-0.084	74	0.021	0.001	-0.082	77	0.024	0.001	-0.090	72	0.023	0.001	-0.088	67	0.022	0.001	-0.083
39 to 30 books	116	0.034	0.001	-0.116	125	0.036	0.001	-0.120	128	0.040	0.002	-0.129	108	0.035	0.001	-0.117	85	0.027	0.001	-0.098
29 to 20 books	213	0.036	0.001	-0.120	199	0.057	0.003	-0.164	186	0.058	0.003	-0.166	159	0.052	0.003	-0.153	188	0.061	0.004	-0.170
19 to 10 books	460	0.136	0.019	-0.271	447	0.129	0.017	-0.264	389	0.122	0.015	-0.257	426	0.138	0.019	-0.273	406	0.131	0.017	-0.266
9 to 5 books	586	0.173	0.030	-0.304	520	0.15	0.022	-0.284	553	0.174	0.03	-0.304	549	0.178	0.032	-0.307	560	0.180	0.032	-0.309
4 to 2 books	874	0.258	0.067	-0.350	854	0.246	0.060	-0.345	821	0.258	0.066	-0.349	833	0.270	0.073	-0.353	861	0.277	0.077	-0.356
1 book	743	0.220	0.048	-0.333	850	0.245	0.060	-0.344	675	0.212	0.045	-0.329	618	0.200	0.040	-0.322	608	0.196	0.038	-0.319
Number of categories (S)	14				14				14				14				14			
Simpson index (D)	0.171				0.169				0.166				0.172				0.173			
Simpson diversity index (SD)	0.829				0.831				0.834				0.828				0.827			
Simpson reciprocal index (SR)	5.848				5.917				6.024				5.814				5.780			
Shannon-Weaver index (H)	1.998				2.019				2.031				1.998				1.989			
Pielou uniformity index (J)	0.757				0.765				0.770				0.757				0.754			

Table 2. Bibliodiversity of publishing companies (continued)

Publishing companies' classification by annual title production	2015	P_i	P_i^2	$P_i\ln[P_i]$	2016	P_i	P_i^2	$P_i\ln[P_i]$	2017	P_i	P_i^2	$P_i\ln[P_i]$	2018	P_i	P_i^2	$P_i\ln[P_i]$	2019	P_i	P_i^2	$P_i\ln[P_i]$
More than 700 books	13	0.004	0	-0.024	13	0.004	0	-0.023	13	0.004	0	-0.023	11	0.004	0	-0.02	13	0.004	0	-0.022
699 to 500 books	7	0.002	0	-0.014	5	0.002	0	-0.011	9	0.003	0	-0.017	4	0.001	0	-0.009	9	0.003	0	-0.017
499 to 400 books	6	0.002	0	-0.013	6	0.002	0	-0.012	6	0.002	0	-0.012	7	0.002	0	-0.014	8	0.003	0	-0.015
399 to 300 books	10	0.003	0	-0.019	21	0.007	0	-0.034	14	0.005	0	-0.025	12	0.004	0	-0.021	11	0.004	0	-0.02
299 to 200 books	22	0.007	0	-0.036	16	0.005	0	-0.028	24	0.008	0	-0.038	21	0.007	0	-0.034	21	0.007	0	-0.033
From 199 to 100 books	72	0.024	0.001	-0.090	85	0.028	0.001	-0.100	96	0.032	0.001	-0.109	81	0.026	0.001	-0.095	97	0.031	0.001	-0.107
99 to 50 books	145	0.049	0.002	-0.148	162	0.054	0.003	-0.157	160	0.053	0.003	-0.155	169	0.054	0.003	-0.158	172	0.054	0.003	-0.158
49 to 40 books	73	0.025	0.001	-0.091	75	0.025	0.001	-0.092	59	0.02	0	-0.077	71	0.023	0.001	-0.086	61	0.019	0	-0.076
39 to 30 books	98	0.033	0.001	-0.113	90	0.030	0.001	-0.104	108	0.036	0.001	-0.119	111	0.036	0.001	-0.119	110	0.035	0.001	-0.117
29 to 20 books	178	0.060	0.004	-0.169	179	0.059	0.004	-0.167	157	0.052	0.003	-0.153	162	0.052	0.003	-0.154	177	0.056	0.003	-0.161
19 to 10 books	367	0.124	0.015	-0.259	399	0.132	0.017	-0.267	415	0.137	0.019	-0.272	404	0.130	0.017	-0.265	414	0.131	0.017	-0.266
9 to 5 books	512	0.173	0.030	-0.303	558	0.184	0.034	-0.312	537	0.177	0.031	-0.307	564	0.181	0.033	-0.309	569	0.18	0.032	-0.308
4 to 2 books	817	0.276	0.076	-0.355	838	0.277	0.077	-0.356	814	0.269	0.072	-0.353	881	0.283	0.08	-0.357	833	0.263	0.069	-0.351
1 book	643	0.217	0.047	-0.332	579	0.191	0.037	-0.316	620	0.205	0.042	-0.325	614	0.197	0.039	-0.320	674	0.213	0.045	-0.329
Number of categories (S)	14				14				14				14				14			
Simpson index (D)	0.177				0.173				0.172				0.177				0.172			
Simpson diversity index (SD)	0.823				0.827				0.828				0.823				0.828			
Simpson reciprocal index (SR)	5.650				5.780				5.814				5.650				5.814			
Shannon-Weaver index (H)	1.966				1.980				1.986				1.962				1.981			
Pielou uniformity index (J)	0.745				0.750				0.753				0.743				0.751			

Source: own elaboration.

4.3. Bibliodiversity of formats

This research considered two categories of format -paper and digital-, according to the Overview of the Spanish Edition of Books. Table 3 includes from 2010 to the year 2019 - last year for which data are available- the two main supports, the number of titles published according to their support, as well as the relative and quadratic weights and the product of the relative one by the respective Naperian logarithm, necessary to determine the different indices. The last five rows summarize the different values obtained for each of them.

The results obtained from the application of the three Simpson indexes show that the Spanish publishing sector is in a very slightly non-bibliodiverse space in terms of formats, given that the value of the Simpson index (D) is very slightly higher, close to 1 than 0. The Simpson diversity index (S_D) highlights the low bibliodiversity of formats, while the value of the Simpson reciprocal index (S_R) points to greater competition between categories (formats) for occupying more market space. The Shanon-Weaver (H) index, on the contrary, affects the existence of specific bibliodiversity from the perspective of the formats since the value obtained is in a position moderately closer to the natural logarithm of 2 (0.69). The Pielou uniformity index (J) underlines this specific diversity because its value shows a significant uniformity in the weight of both categories.

Regarding the bibliodiversity of formats, the data show a marked trend in the evolution of the Simpson index (D) for the Spanish publishing sector to gain in bibliodiversity due to the adaptation of publishers to incorporate digital format but still there is a clear dominance of paper format.

Table 3. Bibliodiversity evolution of formats

Formats	2010	P_i	P_i^2	$P_i\ln[P_i]$	2011	P_i	P_i^2	$P_i\ln[P_i]$	2012	P_i	P_i^2	$P_i\ln[P_i]$	2013	P_i	P_i^2	$P_i\ln[P_i]$	2014	P_i	P_i^2	$P_i\ln[P_i]$
Number of titles - paper format	95959	0.838	0.703	-0.148	91931	0.787	0.619	-0.189	76626	0.762	0.581	-0.207	62947	0.749	0.562	-0.216	66180	0.749	0.562	-0.216
Number of titles - digital format	18500	0.162	0.026	-0.295	24920	0.213	0.046	-0.329	23937	0.238	0.057	-0.342	22669	0.251	0.063	-0.347	22125	0.251	0.063	-0.347
Number of categories (S)	**2**				**2**				**2**				**2**				**2**			
Simpson index (D)	**0.729**				**0.664**				**0.637**				**0.624**				**0.624**			
Simpson diversity index (SD)	**0.271**				**0.336**				**0.363**				**0.376**				**0.376**			
Simpson reciprocal index (SR)	**1.372**				**1.506**				**1.570**				**1.603**				**1.603**			
Shannon-Weaver index (H)	**0.442**				**0.518**				**0.549**				**0.563**				**0.563**			
Pielou uniformity index (J)	**0.638**				**0.748**				**0.792**				**0.812**				**0.812**			

Table 3. Bibliodiversity evolution of formats (continued)

Formats	2015	P_i	P_i^2	$P_i\ln[P_i]$	2016	P_i	P_i^2	$P_i\ln[P_i]$	2017	P_i	P_i^2	$P_i\ln[P_i]$	2018	P_i	P_i^2	$P_i\ln[P_i]$	2019	P_i	P_i^2	$P_i\ln[P_i]$
Number of titles - paper format	57117	0.719	0.518	-0.237	60763	0.707	0.499	-0.245	59780	0.679	0.461	-0.263	58738	0.744	0.554	-0.220	62688	0.717	0.515	-0.238
Number of titles - digital format	22280	0.281	0.079	-0.357	25237	0.294	0.086	-0.360	28317	0.321	0.103	-0.365	20203	0.256	0.066	-0.349	24692	0.283	0.08	-0.357
Number of categories (S)	**2**				**2**				**2**				**2**				**2**			
Simpson index (D)	**0.596**				**0.585**				**0.564**				**0.619**				**0.595**			
Simpson diversity index (SD)	**0.404**				**0.415**				**0.436**				**0.381**				**0.405**			
Simpson reciprocal index (SR)	**1.678**				**1.709**				**1.773**				**1.616**				**1.681**			
Shannon-Weaver index (H)	**0.594**				**0.605**				**0.628**				**0.569**				**0.595**			
Pielou uniformity index (J)	**0.856**				**0.873**				**0.906**				**0.821**				**0.859**			

Source: own elaboration.

4.4. Thematic bibliodiversity

This research used seven categories to measure the thematic bibliodiversity of the Spanish publishing sector, considering their thematic nature, according to the Overview of the Spanish Edition of Books. Table 4 shows from 2010 to 2019 -last year for which data are available- the seven thematic categories, the number of titles published according to their support, as well as the relative and quadratic weights and the product of the relative one by the respective natural logarithm, necessary to determine the different indices. The last five rows summarize the different values obtained for each of them.

The results obtained from the application of the three Simpson indexes show that the Spanish publishing sector is very bibliodiverse from the thematic perspective, given that the value of the Simpson index (D) is closer to 0 than 1. The Simpson diversity index (S_D) highlights the high thematic bibliodiversity, while the value of the Simpson reciprocal index (S_R) points to a low competition between categories (subjects) to occupy a space in the market. The Shanon-Weaver (H) index affects the existence of specific bibliodiversity from the thematic perspective since the value obtained is in a position closer to the natural logarithm of 7 (1.95). The Pielou (J) uniformity index confirms the specific diversity, whose value shows a high uniformity in the weight of the different thematic categories.

Regarding the evolution of thematic bibliodiversity, the data confirm some stability in the Simpson index (D) with a slight tendency to lose bibliodiversity. Perhaps this fact is due to the strategic reorientation by Spanish publishers to publish on those topics that are more profitable compared to others that are less profitable.

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Table 4. Thematic bibliodiversity evolution

Thematic	2010	P_i	P_i^2	$P_i \ln[P_i]$	2011	P_i	P_i^2	$P_i \ln[P_i]$	2012	P_i	P_i^2	$P_i \ln[P_i]$	2013	P_i	P_i^2	$P_i \ln[P_i]$	2014	P_i	P_i^2	$P_i \ln[P_i]$
Children and youth	12042	0.112	0.013	-0.245	12163	0.114	0.013	-0.248	11182	0.111	0.012	-0.244	10305	0.120	0.015	-0.255	7505	0.095	0.009	-0.223
Textbooks	16665	0.155	0.024	-0.289	14837	0.14	0.02	-0.275	12533	0.125	0.016	-0.259	10951	0.128	0.016	-0.263	9781	0.124	0.015	-0.258
Literary creation	21496	0.199	0.04	-0.321	22625	0.213	0.045	-0.329	21583	0.215	0.046	-0.33	18939	0.221	0.049	-0.334	17330	0.219	0.048	-0.332
Social sciences and humanities	34584	0.321	0.103	-0.365	35304	0.332	0.11	-0.366	31930	0.318	0.101	-0.364	26456	0.309	0.096	-0.363	26908	0.34	0.115	-0.367
Scientists and technicians	11673	0.108	0.012	-0.241	11265	0.106	0.011	-0.238	13863	0.138	0.019	-0.273	9511	0.111	0.012	-0.244	8378	0.106	0.011	-0.238
Free time	7197	0.067	0.005	-0.181	7005	0.066	0.004	-0.179	6332	0.063	0.004	-0.174	6218	0.073	0.005	-0.19	7191	0.091	0.008	-0.218
Others	4173	0.039	0.002	-0.126	3085	0.029	0.001	-0.103	3140	0.031	0.001	-0.108	3236	0.038	0.001	-0.124	2131	0.027	0.001	-0.097
Number of categories (S)	7				7				7				7				7			
Simpson index (D)	0.197				0.205				0.199				0.194				0.208			
Simpson diversity index (1-D)	0.803				0.795				0.801				0.806				0.792			
Simpson reciprocal index (1 / D)	5.076				4.878				5.025				5.155				4.808			
Shannon-Weaver index (H)	1.767				1.738				1.754				1.773				1.733			
Pielou uniformity index (E)	0.908				0.893				0.901				0.911				0.891			

Table 4. Thematic bibliodiversity evolution (continued)

Thematic	2015	P_i	P_i^2	$P_i \ln[P_i]$	2016	P_i	P_i^2	$P_i \ln[P_i]$	2017	P_i	P_i^2	$P_i \ln[P_i]$	2018	P_i	P_i^2	$P_i \ln[P_i]$	2019	P_i	P_i^2	$P_i \ln[P_i]$
Children and youth	7919	0.100	0.010	-0.230	9317	0.108	0.012	-0.241	11269	0.125	0.016	-0.26	7973	0.098	0.010	-0.228	9688	0.111	0.012	-0.244
Textbooks	11273	0.142	0.020	-0.277	10884	0.127	0.016	-0.262	7886	0.088	0.008	-0.213	5185	0.064	0.004	-0.176	5735	0.066	0.004	-0.179
Literary creation	16564	0.209	0.044	-0.327	18424	0.214	0.046	-0.33	21745	0.242	0.058	-0.343	17146	0.211	0.045	-0.328	21846	0.25	0.063	-0.347
Social sciences and humanities	25610	0.323	00.104	-0.365	26656	0.31	0.096	-0.363	27661	0.308	0.095	-0.363	31238	0.385	0.148	-0.367	31794	0.364	0.132	-0.368
Scientists and technicians	9613	0.121	0.0150	-0.256	12111	0.141	0.02	-0.276	12726	0.142	0.02	-0.277	11438	0.141	0.02	-0.276	10114	0.116	0.013	-0.25
Free time	6346	0.08	0.006	-0.202	6187	0.072	0.005	-0.189	6395	0.071	0.005	-0.188	6492	0.080	0.006	-0.202	6244	0.072	0.005	-0.189
Others	2072	0.026	0.001	-0.095	2421	0.028	0.001	-0.100	2280	0.025	0.001	-0.093	1756	0.022	0.001	-0.083	1959	0.022	0.001	-0.085
Number of categories (S)	7				7				7				7				7			
Simpson index (D)	0.199				0.196				0.202				0.233				0.231			
Simpson diversity index (1-D)	0.801				0.804				0.798				0.767				0.769			
Simpson reciprocal index (1 / D)	5.025				5.102				4.951				4.292				4.329			
Shannon-Weaver index (H)	1.752				1.761				1.737				1.66				1.66			
Pielou uniformity index (E)	0.900				0.905				0.893				0.853				0.853			

Source: own elaboration.

4.5. Gender bibliodiversity

This research considered two gender categories to measure the gender bibliodiversity of the Spanish publishing sector, according to the Survey of Cultural Habits and Practices. Table 5 collects from 2010 to 2019 -the latest year for which data are available- the two gender categories, the number of titles published according to the author's gender, as well as the relative and quadratic weights, and the product of the relative one by the respective Naperian logarithm, necessary to determine the different indices. The last five rows summarize the different values obtained for each of them.

The results obtained from the three Simpson indices show that the Spanish publishing sector is not bibliodiverse from the gender perspective. The value of the Simpson index (D) is closer to 1 than 0. The Simpson diversity index (S_D) highlights the low gender bibliodiversity, as does the Simpson reciprocity index (S_R). The Shanon-Weaver (H) index, on the contrary, points to the existence of specific bibliodiversity from a gender perspective since the value obtained is in a position closer to the natural logarithm of 2 (0.69). The Pielou uniformity index underlines this specific diversity, whose value reveals a significant uniformity in the weight of the different gender categories. In short, despite the low gender bibliodiversity in the Spanish publishing sector, some dynamics point towards greater diversity, evidenced by the specific diversity and uniformity indexes.

Table 5. Gender bibliodiversity evolution

Gender	2010	P_i	P_i^2	$P_i\ln[P_i]$	2011	P_i	P_i^2	$P_i\ln[P_i]$	2012	P_i	P_i^2	$P_i\ln[P_i]$	2013	P_i	P_i^2	$P_i\ln[P_i]$	2014	P_i	P_i^2	$P_i\ln[P_i]$
Men	95959	0.838	0.703	-0.148	91931	0.787	0.619	-0.189	76626	0.762	0.581	-0.207	62947	0.735	0.541	-0.226	66180	0.749	0.562	-0.216
Women	18500	0.162	0.026	-0.295	24920	0.213	0.046	-0.329	23937	0.238	0.057	-0.342	22669	0.265	0.070	-0.352	22125	0.251	0.063	-0.347
Number of categories (S)	2				2				2				2				2			
Simpson index (D)	**0.729**				**0.664**				**0.637**				**0.611**				**0.624**			
Simpson diversity index (1-D)	**0.271**				**0.336**				**0.363**				**0.389**				**0.376**			
Simpson reciprocal index (1 / D)	**1.372**				**1.506**				**1.570**				**1.637**				**1.603**			
Shannon-Weaver index (H)	**0.442**				**0.518**				**0.549**				**0.578**				**0.563**			
Pielou uniformity index (E)	**0.638**				**0.748**				**0.792**				**0.834**				**0.812**			

Table 5. Gender bibliodiversity evolution (continued)

Gender	2015	P_i	P_i^2	$P_i\ln[P_i]$	2016	P_i	P_i^2	$P_i\ln[P_i]$	2017	P_i	P_i^2	$P_i\ln[P_i]$	2018	P_i	P_i^2	$P_i\ln[P_i]$	2019	P_i	P_i^2	$P_i\ln[P_i]$
Men	57117	0.719	0.518	-0.237	60763	0.707	0.499	-0.245	66664	0.757	0.573	-0.211	61140	0.775	0.600	-0.198	65214	0.746	0.557	-0.218
Women	22280	0.281	0.079	-0.357	25237	0.294	0.086	-0.36	21433	0.243	0.059	-0.344	17801	0.226	0.051	-0.336	22166	0.254	0.064	-0.348
Number of categories (S)	2				2				2				2				2			
Simpson index (D)	**0.596**				**0.585**				**0.632**				**0.651**				**0.621**			
Simpson diversity index (1-D)	**0.404**				**0.415**				**0.368**				**0.349**				**0.379**			
Simpson reciprocal index (1 / D)	**1.678**				**1.709**				**1.582**				**1.536**				**1.610**			
Shannon-Weaver index (H)	**0.594**				**0.605**				**0.555**				**0.534**				**0.566**			
Pielou uniformity index (E)	**0.856**				**0.873**				**0.801**				**0.77**				**0.817**			

Source: own elaboration.

4.6. Global Perspective: Spanish publishing Sector Bibliodiversity Index

Figure 2 summarizes the evolution of the five bibliodiversity variables considered in this study over the last decade.

Figure 2. Evolution of bibliodiversity according to the main variables
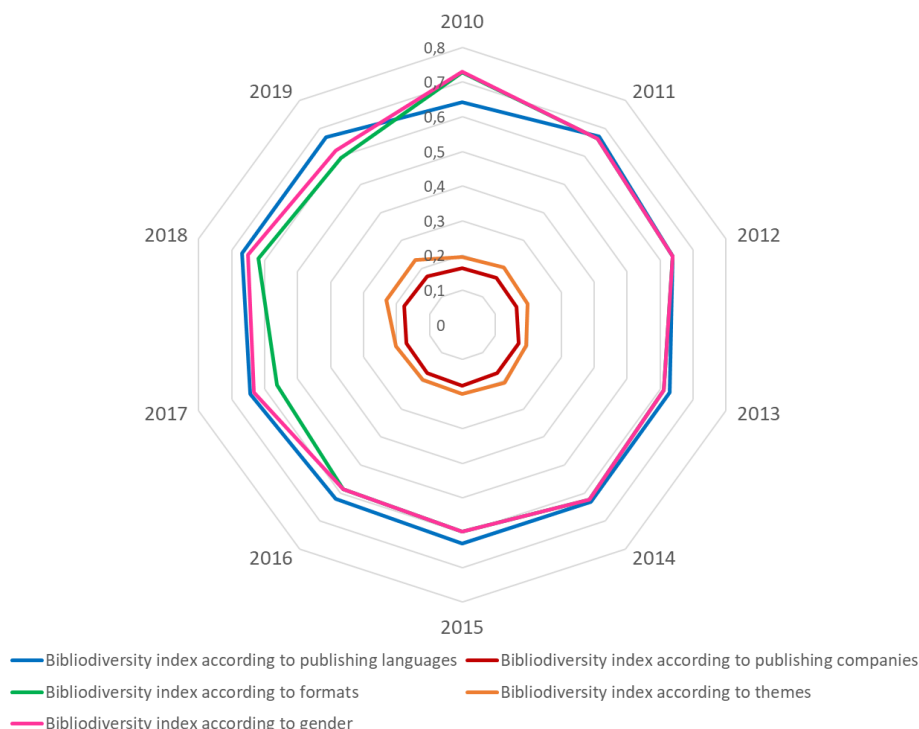
Source: own elaboration.

There is significant thematic and bibliodiversity of publishing companies in the Spanish publishing sector, compared to the lower linguistic and support bibliodiversity, although with a tendency in this last variable to gain diversity.

Given the different results of the Simpson index (1949) according to the variable considered, to summarize them in a single data, the use of an average value is proposed that, as a measure of central tendency, condenses them, as expressed in the following formula:

$$B = \frac{\sum_{j=1}^{K} D_j}{K} \ [6]$$

Where *B* represents the bibliodiversity of the publishing sector, *K* is the number of measurable variables that define bibliodiversity, and D_j is the Simpson index of variable *j*.

In this specific case, the bibliodiversity of the Spanish publishing sector, defined through five measurable variables (linguistic, editorial, media, subject, and gender), concludes that the final value obtained from applying [6] is 0.462 and, therefore, the Spanish publishing sector is, in general terms, bibliodiverse.

5. Conclusions

As indicated at the beginning of this research, the main objective is to determine whether the Spanish publishing sector was bibliodiverse. For this, after analyzing the broad and complex concept of bibliodiversity offered by the academic literature, it was necessary the development of a theoretical framework to: a) analyze the necessary conditions that favor the development of bibliodiversity in the Spanish publishing sector, b) identify those variables that, forming part of the bibliodiversity, are susceptible to measurement and c) be able to calculate the degree of diversity of the Spanish publishing sector, through the generation of a synthetic index of bibliodiversity of the publishing sector.

From the study of the contributions of the academic literature, this research forms an analysis model with the main necessary conditions of the bibliodiversity of the Spanish publishing sector: deconcentration, digital transformation, and glocalization.

This work has attempted to suggest a methodology to measure bibliodiversity in its multidimensional nature. The variables measured in the proposed analysis model were the following: linguistic bibliodiversity, bibliodiversity of publishing companies, bibliodiversity of formats, thematic bibliodiversity, and finally, gender bibliodiversity.

Once obtained the statistical information for the 2010-2019 period of each of the four variables, this research applied the different Simpson indexes, the Shanon-Weaver index, and the Pielou index.

The results obtained for 2019 and segmented by the variables considered show that the Spanish publishing sector is not very bibliodiverse both linguistically and from the format perspective while it is significantly bibliodiverse both from the publishing companies' perspective and from the thematic and gender perspective.

The analysis of the Simpson index during the last decade for each of the variables studied made it possible to make a series of revealing findings on the evolution of the bibliodiversity in the Spanish publishing sector.

Concerning linguistic bibliodiversity, the data show evident stability, underlining the absence of significant alterations in the last ten years in the Spanish publishing sector, characterized by the dominance of the Spanish language, compared to the other languages, leading to a relatively low linguistic bibliodiversity.

In the case of the high editorial bibliodiversity, the data also show strong stability, although with a very slight tendency to lose editorial bibliodiversity, which would be further proof of the degree of sectoral deconcentration operated in recent years and which has resulted in the appearance of a good number of small and medium-sized independent publishers. The explanation of the slight loss of bibliodiversity of publishing companies could be in the disappearance of small-size publishing companies unable to overcome the Great Crisis and adapt to technical changes.

Regarding the bibliodiversity of formats, the data indicate a marked tendency for the Spanish publishing sector to gain in bibliodiversity, even though it is little bibliodiverse due to the strong dominance of paper support compared to other alternative digital-based supports. This process requires the assumption by the publishing companies in a new format and the need to modify the sector's traditional business models to adapt them to these new formats.

The data relating to thematic bibliodiversity show marked stability, but with a very slight tendency to lose bibliodiversity even though the sector is very bibliodiverse. Perhaps, this is due to the strategic reorientation of part of Spanish publishers to publish on those more profitable topics, compared to others that are not so profitable.

Regarding gender bibliodiversity, the data obtained show a moderate trend towards bibliodiversity. Nevertheless, currently, the Spanish publishing sector is not very bibliodiverse due to this case is the only one in which the specific diversity and uniformity indices offer different results from those obtained by the Simpson diversity indices.

Finally, to summarize the different indices in a single value, this research used a synthetic index of bibliodiversity of the Spanish publishing sector that adopted the form of arithmetic mean as a measure of central tendency. Its calculation highlighted that the Spanish publishing sector is bibliodiverse.

As statistical information improves, it will be possible to have more technically accurate indicators. Thus, it would be possible to add new variables that define bibliodiversity, and that in the future may be susceptible to measurement.

The calculation of the bibliodiversity of the Spanish publishing sector can be a significant element in the design of public policies aimed at guaranteeing said diversity, acting on those areas where there is a lack of bibliodiversity and controlling that, in the long term, said diversity is maintained.

References

Acción Cultural Española. (2021). *España. Creatividad desbordante* (España Invitada de Honor En La Feria Del Libro de Fráncfort, pp. 1–16). Ministerio de Cultura y Deporte. Gobierno de España.

Alonso, J. C. (2021). Repercusiones del fenómeno migratorio en la sensibilidad hacia la diversidad lingüística y cultural durante la adolescencia temprana en España. *Lengua y Migración*, *13*(1), 77–102.

Benhamou, F., & Peltier, S. (2007). How should cultural diversity be measured? An application using the French publishing industry. *Journal of Cultural Economics*, *31*(2), 85–107. https://doi.org/10.1007/s10824-007-9037-8

Berger, M. (2021). Bibliodiversity at the Centre: Decolonizing Open Access. *Development and Change*, *52*(2), 383–404. https://doi.org/10.1111/dech.12634

De Andrés, P. (2010). El sector editorial español. *El Profesional de La Información*, *19*(1), 5–11. https://doi.org/10.3145/epi.2010.ene.01

De Diego, J. L. (2015). *La otra cara de Jano. Una mirada crítica sobre el libro y la edición*. Ampersand.

De Miguel, E., & Buitrago, M. C. (2009). *La pluralidad lingüística: Aportaciones sociales, culturales y formativas*. Ministerio de Educación Cultura y Deporte.

FEDECALI. (2020). *Comercio Exterior del Libro, 2019*. Asociación de las Cámaras del Libro de España. https://www.federacioneditores.org/img/documentos/comercio_exterior_2019.pdf

Fernandez, M. (2012). Creating knowledge networks: Spanish multinational publishers in Mexico. *Business History Review*, *86*(1), 69–98.

Fernandez, M. (2019). Battling Giants: Spanish Publishing Multinationals in the First Global Economy. *Enterprise & Society*, *20*(4), 1007–1043. https://doi.org/10.1017/eso.2019.24

FGEE. (2020). *Comercio Interior del Libro, 2019*. Federación de Gremios de Editores de España. https://www.federacioneditores.org/img/documentos/comercio_interior_2019.pdf

Gallego, A. (2019). Las editoriales independientes en el punto de mira literario: Balance y perspectivas teóricas. *Caravelle. Cahiers Du Monde Hispanique et Luso-Brésilien*, *113*, 61–76. https://doi.org/10.4000/caravelle.6451

Gallego, A. (2020). Bibliodiversidad y contracultura material: Un análisis cualitativo y cuantitativo de la edición independiente en lengua castellana. In *Dynamics of Global Publishing and the Latin American Case between the Archive and the Digital Age* (pp. 71–94). De Gruyter. https://doi.org/10.1515/9783110713015-006

Gómez, A., & Hellín, P. A. (2019). *Estrategias de comunicación de las editoriales literarias de España. Investigación bibliotecológica*. *33*(80), 57–71.

Hawthorne, S. (2014). *Bibliodiversity: A manifesto for independent publishing*. Spinifex Press.

Hawthorne, S. (2016). Bibliodiversity: Creating content or invigorating culture? *Logos*, *27*(1). https://doi.org/10.1163/1878-4712-11112099

IAIP. (2014). *Declaration of Independent Publishers*. International Alliance of Independent Publishers. https://www.allianceediteurs.org/IMG/pdf/international_declaration _of_independent_publishers_2014-2.pdf

Kawashima, N. (2011). Are the global media and entertainment conglomerates having an impact on cultural diversity? A critical assessment of the argument in the case of the film industry. *International Journal of Cultural Policy*, *17*(5), 475–489. https://doi.org/10.1080/10286632.2010.533764

Locane, J. J. (2019). Edición "independiente" y bibliodiversidad. Reflexiones. In *De la literatura latinoamericana a la literatura (latinoamericana) mundial: Condiciones materiales, procesos y actores* (pp. 172–185). De Gruyter. https://doi.org/10.1515/9783110622096-015

Magadán, M., & Rivas, J. I. (2019). Digitalización y modelos de negocio en la industria editorial española. *Journal of Technology Management & Innovation*, *14*(1), 63–72. http://dx.doi.org/10.4067/S0718-27242019000100063

Magadán, M., & Rivas, J. I. (2020). Dimensión económica y cultural del mercado del libro en España (1995-2019). *El Profesional de La Información*, *29*(3), 1–14. https://doi.org/10.3145/epi.2021.mar.22

Magadán, M., & Rivas, J. I. (2021). La industria editorial española: Dos décadas clave de transformación y cambio (1996-2016). *Investigaciones de Historia Económica*, *17*(3), 25–39. https://doi.org/10.33231/j.ihe.2020.04.003

Martire, J. L. (2021). Amplifying silenced voices through micro-and small-press publishing. *Publishing Research Quarterly*, *37*(2), 213–226. https://doi.org/10.1007/s12109-021-09797-7

MCD. (2020). *Panorámica de la edición española de libros 2019. Análisis sectorial del libro*. Ministerio de Cultura y Deporte. https://www.libreria.culturaydeporte.

gob.es/libro/panoramica-de-la-edicion-espanola-de-libros-2019-analisis-sector ial-del-libro_3910/

Mihal, I. (2013). Actores y procesos en la gestión de la bibliodiversidad. *Alteridades*, *23*(45), 123–136.

Nadal, J., & García, F. (2005). *Libros o velocidad: Reflexiones sobre el oficio editorial*. Libraria.

Pielou, E. C. (1969). *An introduction to mathematical ecology*. Wiley-Interscience.

Ranaivoson, H. (2007). *Measuring cultural diversity: A review of existing definitions* (p. 31). http://uis.unesco.org/sites/default/files/documents/measuring-cultural-diversity-a-review-of-existing-definitions-2007-en.pdf

Roudometof, V. (2016). Theorizing glocalization: Three interpretations. *European Journal of Social Theory*, *19*(3), 391–408. https://doi.org/10.1177/1368 431015605443

Sánchez, E. (2017). La lectura digital: Perspectiva transhistórica y cognitiva. *MÉI: Métodos de Información*, *8*(14), 67–88. http://dx.doi.org/10.5557/IIMEI8-N14-067088

Sapiro, G. (2009). *Les contradictions de la globalisation éditoriale*. Nouveau Monde.

Shannon, C. E., & Weaver, W. (1949). *The Mathematical Theory of Communication. .* Urbana, IL: The University of Illinois Press.

Shea, N. (2018). Curators of culture: Redefining the role of editors. *Publishing Research Quarterly*, *34*(1), 110–117. https://doi.org/10.1080/17449626.2021.1883877

Simpson, E. H. (1949). Measurement of diversity. *Nature*, *163*(4148), 688–688. http://dx.doi.org/10.1038/163688a0

Tille, N. (2017). Bibliodiversidad y género en América Latina: El valioso modelo de la editorial Cuarto Propio en Chile. *The Latin Americanist*, *61*(1), 93–108. https://doi.org/10.1111/tla.12104]

UNESCO. (2005). *Convención de la unesco sobre la protección y la promoción de la diversidad de las expresiones culturales* (p. 17). Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura. http://unesdoc.unesco.org/images/0014/001429/142919s.pdf

Val, A. (2017). La diversidad cultural: ¿es posible su aplicación al sector audiovisual? *Comunicación y Sociedad*, *28*, 111–130.