

The environmental information report in the annual accounts: An analysis of the main ports in Spain

Cristina Crespo Soler

Principal Investigator-Instructor. Vice Dean of Participation, Volunteerism and Equality. Accounting Department - College of Economics, University of Valencia. Member of AICOGestión. Spain. ORCID: [0000-0003-0704-4578](https://orcid.org/0000-0003-0704-4578)

Arturo Giner Fillol

Economic-Financial Director of the Valencia Port Authority. Professor in different Master's programs at the University of Valencia. Spain. ORCID: [0000-0002-2507-276X](https://orcid.org/0000-0002-2507-276X)

Yenny Naranjo Tuesta

Doctoral student in Corporate Accounting and Finance at the University of Valencia. Member of AICOGestión. Spain. ORCID: [0000-0001-9301-373X](https://orcid.org/0000-0001-9301-373X)

Vicente Ripoll Feliu

Principal Investigator-Instructor. Accounting Department - College of Economics, University of Valencia. President of AICOGestión. Spain. ORCID: [0000-0003-2436-1559](https://orcid.org/0000-0003-2436-1559)

cristina.crespo@uv.es, aginer@valenciaport.com, yennyna@alumni.uv.es, vicente.Ripoll@uv.es

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Abstract

The aim of this work is to present the content analysis on the intelligibility of the environmental information that is reported in the annual accounts of the main Port Authorities in Spain. The annual accounts are related to documents that contain primarily financial information, and thus meet the needs of users (especially external users) in the decision-making process; in this sense, the work analyzes the environmental aspects presented in them. The data analyzed lead us to conclude that the Port Authorities of Castellón, Gijón and Valencia are the ones that provide the most information about their activities and environmental actions in their annual reports; however, with regard to the clarity of the information reported, the Port Authority of Cartagena is the clearest in conveying the message, while the information presented by the Port Authorities of Castellón and Huelva is less explicit. It is thus recommendable for the Port Authorities to improve their communication strategies in their annual reports, in order to demonstrate their environmental actions in the immediate socioeconomic environment, referring to other sources of information, such as sustainability reports.

Key words

Port Authorities, annual accounts, environmental impact, information intelligibility.

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The annual accounts should state aspects related to environmental management on both the balance sheet and in the profit and loss accounts

1. Introduction

Due to increasing social interest in aspects related to the environmental actions taken by companies, this becomes a key factor when it comes to decision-making. The International Maritime Organization (IMO) has established mechanisms so that companies in this sector can focus on minimizing the impact of the greenhouse gases, according to the provisions signed by the countries in the Kyoto Protocol and others, such as the Paris COP-21¹. The European Sea Ports Organisation (ESPO) established the Environmental Code of Conduct in 2003, which intends to improve the information in the areas of environmental management and policies, integrating the ports into the community.

In the environmental-financial relationship on environmental matters, the annual accounts must state in both the Balance and the Profits and Loss Accounts those aspects that are derived from environmental management (Crespo, Giner, Ripoll & Crespo, 2005). This way, developments in port management are evidenced in terms of the environmental impact and the repercussion that this has, not only for society, but also internally, on corporate endeavors (Crespo, Giner, Morales, Pontet & Ripoll, 2007). Although they are topics of general interest, the research along this line is still in the very early stages, and from the perspective of accounting and port management, it is still quite scarce.

In order to contribute to the academic and professional discussion that exists on these topics, this study intends to analyze the clarity of the information on environmental matters that is reported by the Spanish Port Authorities in their annual accounts. This means that the type and intelligibility of the environmental information will be shown as revealed by the ports in the financial information they provide to different users. To do this, a textual and content analysis is carried on the annual reports published by the main Port Authorities in Spain.

Following this introduction, we present the description of the ports from an environmental perspective, focusing on the main Port Authorities in Spain. Next we reveal the importance of disseminating the financial information and its relation to environmental issues. Then we present a textual and content analysis that is carried on the annual reports published by the main Port Authorities in Spain. Finally, the conclusions recommend that the Port Authorities need to do more than simply include environmental information in the annual accounts. This information must be intelligible to all members of the interested audience, which is currently not the case, as the reports are presented in a very technical language that makes them difficult to understand.

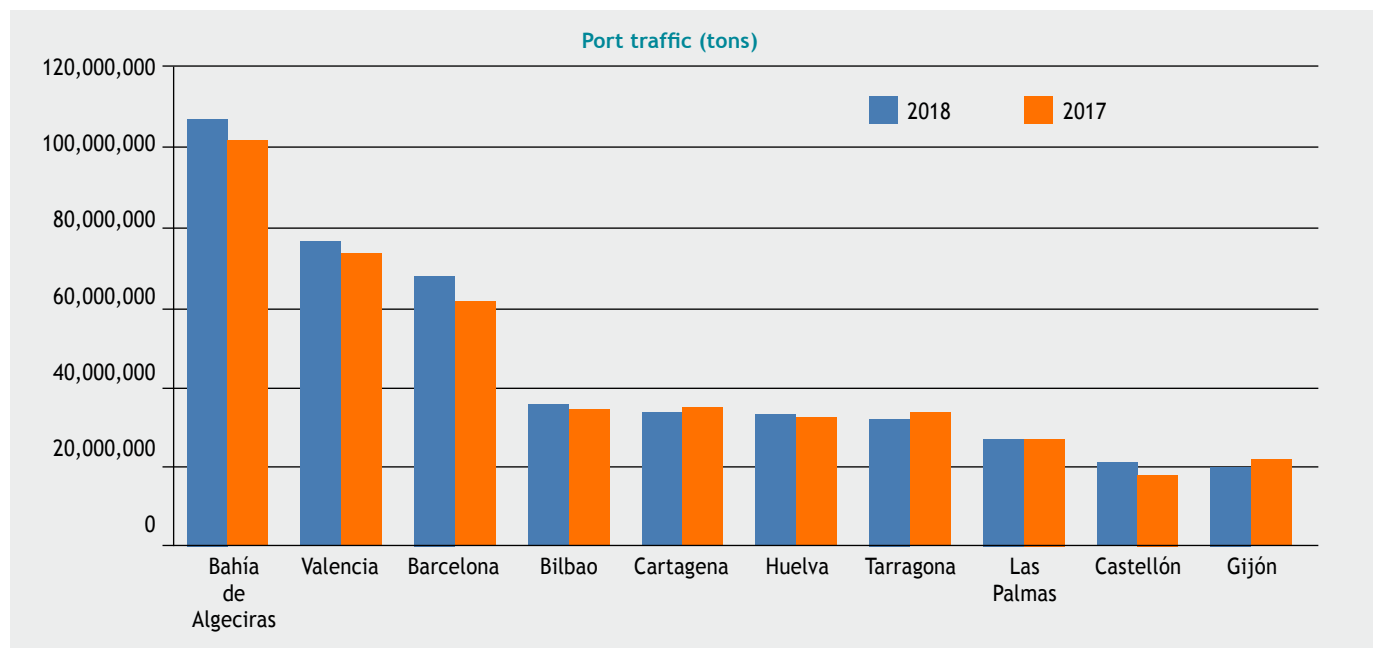
2. The Port Authorities and their environmental vision

Spain is considered to be geographically one of the countries in the European Union with the most coast and as a logistically important space in southern Europe. For this reason, the port systems play a vitally important role in the country's economy. The State Ports Authority (2018) states that the activity of the Spanish port system accounts for nearly 20% of the GDP in the transport sector, contributing 1.1% of the GDP in Spain. The port system generates direct employment for more than 35,000 people and indirectly for another 110,000, and is economically representative and important in different studies (Puertos del Estado, 2018). The port system is made up of 28 Port Authorities (hereinafter, PA), the control and coordination of which is under the State Ports Authority (controlled by the Ministry of Public Works).

¹ Conference 21 of the parties to the United Nations Framework Convention on Climate Change.

In the port system, the PAs of Bahía de Algeciras, Valencia, Barcelona, Bilbao and Las Palmas stand out for being among the 125 most important ports in the world, through which around 12 million containers passed in 2017. Altogether, these PA moved nearly 86% of the entire port system operated by Spain (Spanish Ports, 2018). Other important PAs, as shown in Figure 1, are those of Huelva, Gijón, Tarragona, Cartagena and Castellón, which have an influence on the total traffic in Spain.

Figure 1
Total Spanish port traffic



Source: Spanish Ports Statistical Report (2018)

The IMO and PAs, in this case, recognize that their activities are generating an environmental impact and are not isolated from the environmental problem the world is currently experiencing. In particular, their operations can produce greenhouse gases, and it is necessary to incorporate environmental aspects in economic and financial reports, listing in the annual accounts the actions and measures taken by the organizations in terms of the environment. These practices generate competitive, sustainable markets that promote not only a culture of accountability, but also allows them to be visible in their environment (Merk, 2013).

Aware of the environmental problem, in 2008, 55 of the world's largest ports voluntarily signed the World Port Climate Declaration (WPCD) and joined the International Port Association, which is committed to the long-term work of implementing measures through the World Port Climate Initiative (WPCI) (Fenton, 2017), which is being gradually adopted by different PA. Bahía de Algeciras, Barcelona, Gijón, Valencia and Vigo have incorporated this measure, which indicates that the main Spanish PA are increasingly more interested in taking actions that contribute to reducing greenhouse gases. This is reflected in the establishment of environmental policies, structuring of management and control systems with environmental components, obtaining environmental certifications and the physical changes and changes in structure made by ports in terms of their facilities, among other measures.

The port systems play a vitally important role for the country's economy

These actions and investments that the different ports are developing in favor of the environment must be exposed and disseminated in the community, using different channels to do so. Accordingly, since the annual accounts are the main source of information consulted to help external users make decisions based on economic-financial aspects, the information reported on environmental matters takes on fundamental importance (Crespo et al., 2007).

3. Importance of disseminating information in the annual accounts

The Consolidated Text of the State Ports and Merchant Marine Act approved by Legislative Decree 2/2011, of 5 September establishes that the PA are public entities with legal personality and their own assets independent of those belonging to the State, with full capacity to take action in the pursuit of their purposes, acting subject to private legal regulations; in addition, they are governed by Law 39/2015, of 1 October, on the Common Administrative Procedure of the Public Administrations and the General Budgetary Act and supplementally by Law 40/2015, of 1 October, on the Legal Regime in the Public Sector.

In Spain, the port regulations articulate aspects of the General Accounting Plan, the resolutions of the Institute of Accounting and Account Audits, and in accordance with port legislation, regulations and instructions established by the State Ports Authority. The PAs that make up the Spanish port system must publish their annual accounts in the Official Spanish State Gazette (BOE)² in order to promote transparency of information and aspects related to accountability, made mandatory in Spain by Law 47 of 26 November 2003³.

The annual accounts report the financial statements, the annual report and the audit report, and although the law generically establishes that environmental information must be presented in them, each PA voluntarily presents the aspects it considers relevant in this area. In the environmental-financial section, Crespo et al. (2005) indicate that the annual accounts should set out the property, rights and obligations associated with environmental protection on the balance sheet, and the income and expenses derived from environmental management in the profit and loss account. In this sense, the accounts must take into account in the environmental aspects information on: income, subsidies, operating expenses and extraordinary expenses, projects and works that generate an environmental impact, repercussions, tangible and intangible fixed assets, provisions, contingencies, obligations and environmental fiscal repercussions that are developed and managed by the ports (Crespo et al., 2007).

Since it is one of the reports commonly consulted by external users, it is important for the environmental information⁴ reported by the PAs in their annual accounts to be clear and comprehensible to all types of users. In spite of the fact that the legal dicta are very generic in terms of the presentation of said information, there is increasing evidence of a real culture of

² With the aim of disseminating different information about their organizations on the digital platform to the interested audience, it is necessary to wait for a resolution to be issued by the Ministry of Public Works. This process is more bureaucratic, and therefore the reports are not up to date, which makes it more difficult to obtain them.

³ It should be mentioned that after the work completed, corresponding to the year 2017, Law 11 of 2018 was issued, which modifies the code of Commerce, the consolidated text of the Corporations Law, approved by Royal Legislative Decree 1/2010, of 2 July, and Law 22/2015, of 20 July, on Accounts Auditing, with regard to non-financial information and diversity. But given the legal structure of the Port Authorities, only some concepts of the code of commerce and the accounts auditing act are applicable in terms of their public aspects.

⁴ Based on Law 11 of 2018, this aspect is contemplated in the following manner: "The consolidated annual accounts must include the balance sheet, the profit and loss account, a statement that reflects the changes in the net assets for the year, a cash flow statement and the annual report in a consolidated manner. These documents form a single unit. The consolidated annual accounts are joined by the consolidated management report, which will include, as appropriate, the non-financial information statement," with the most comprehensive and relevant information on environmental matters being published.

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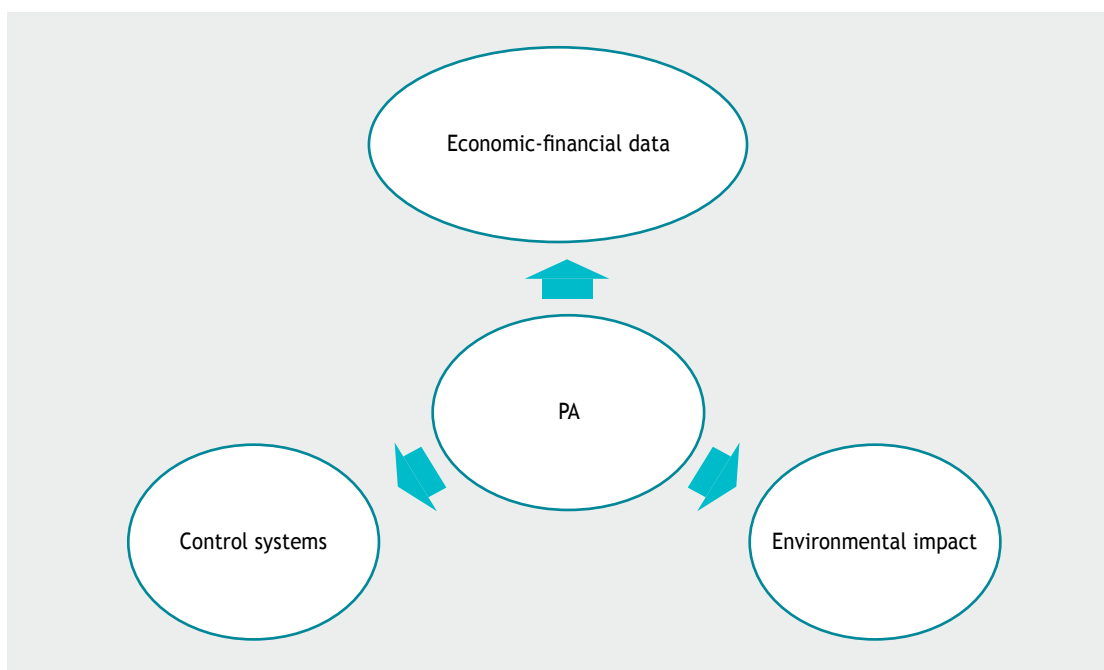
supplying information and of including environmental topics in these reports, which has been strengthened in recent years by regulations and external pressures (Chirino, Hernández & Ledezma, 2014). This is seen in greater detail in the data that each PA supplies in economic terms on their environmental management in their different reports.

4. Analysis of the annual accounts

The annual accounts of the ten main PAs (mentioned in section three) were selected based on their importance in terms of freight traffic in Spain and for being leaders in southern Europe. The aim is to analyze the contents and text of the environmentally-related information in this economic and financial report, primarily in an effort to understand what type of data are reported by the PAs and what financial aspects are the most visible, as well as the clarity of their publication.

As observed in Figure 2, the data used are of an economic and financial nature, considering the annual accounts of the PAs, along with the annual reports and audit report published in the Official Spanish State Gazette in 2017, corresponding to the 2016 financial year.

Figure 2
Area of analysis of the annual accounts



Source: Authors' own work

The “environmental information” section is analyzed to disaggregate the type of data reported, to determine whether aspects related to the environmental impact of the Port Authority’s activities are reported. Using the works by Crespo et al. (2005, 2007) as a base, the following aspects were mainly reviewed, which are considered to be the variables of the study:

- Environmental information: In this item, it is indicated whether the section is included in their annual accounts.

The environmental information revealed depends on the internalization and importance of this aspect for each Port Authority

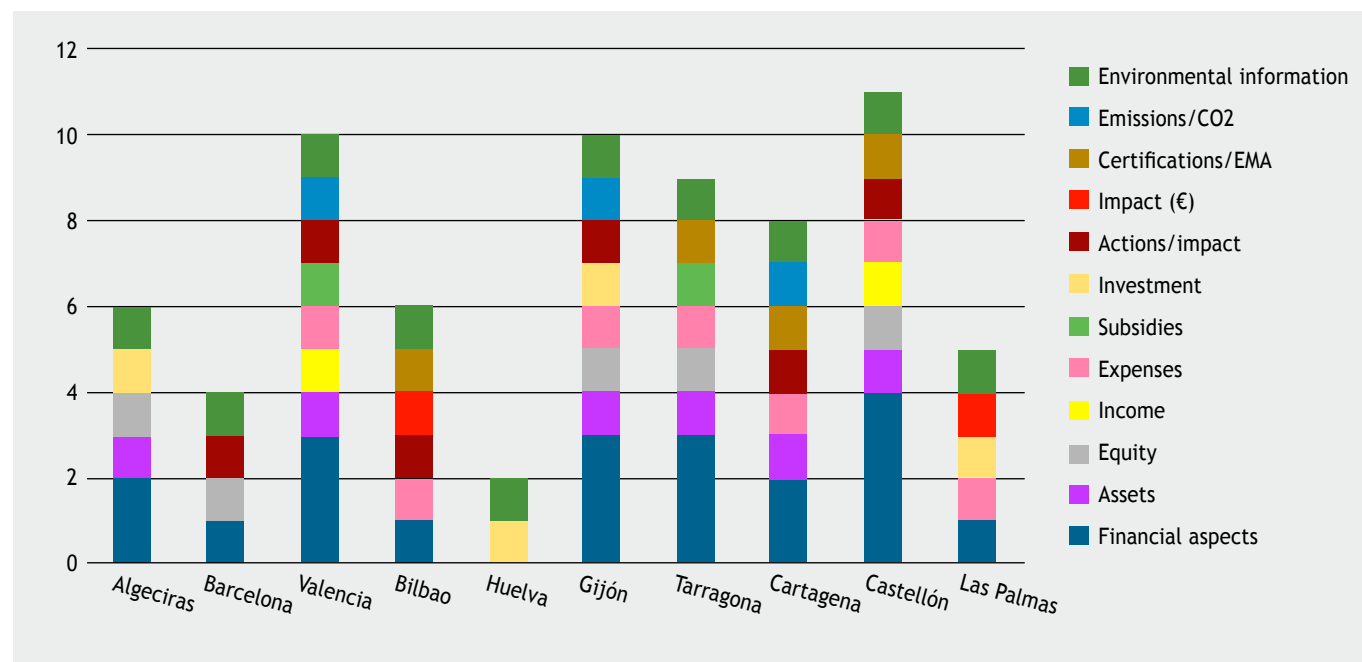
- Emissions/CO2: It is indicated whether they express in their annual accounts information on greenhouse gases, particularly aspects related to information on CO2.
- Certifications/EMA: It is reviewed whether it is stated in the annual accounts that they have incorporated some type of environmental certification or environmental management systems.
- Impact (€): It is reviewed whether they express the environmental repercussion that they generate in economic terms.
- Actions/impact: It was analyzed whether they mention (in non-economic terms) their environmental actions and management performed or that they plan to perform in order to minimize the environmental impact.
- Investment: It was primarily reviewed whether investments in environmental areas existed and were explained.
- Subsidies: It was examined whether having environmentally-related subsidies was mentioned in the annual accounts.
- Financial aspects, expenses, income, equity and assets: It was reviewed whether there were any tables, figures or economic details of the environmental management in these line items on the Balance Sheet and the Profit and Loss Accounts.

4.1. Content analysis

The content analysis (Andréu, 2002; Porta & Silva, 2003), through the previously mentioned categories, makes it possible to conduct a qualitative review of the environmental information presented in the annual accounts of the PAs. In this regard, it is important to stress that all the accounts analyzed publish environmental information, although their content differs. Used as a reference for the study were the annual accounts corresponding to the year 2016, which were published in 2017.

Figure 3

Environmental information provided by the PAs



Source: Authors' own work

The texts that use a more technical language (with a higher index) are those corresponding to the PAs of Algeciras and Tarragona

As observed in Figure 3, among the categories analyzed in the reports, the PAs of Castellón, Gijón and Valencia are the ones that publish the most data related to the environment. It should be noted that the Port Authority of Valencia presents information related to environmental assets, income and expenses, and also states the subsidies received in relation to environmental matters and actions taken to minimize their environmental impact, specifically referring to the carbon footprint. The Port Authority of Gijón also presents financial data, such as environmental assets, equity and expenses, and specifies the investments made to reduce emissions and their impact on the environment. The Port Authority of Castellón, in addition to the financial environmental information it publishes, specifies the certificates, such as ISO 14001 and the environmental management systems implemented, which help perform better in terms of the environment.

It is observed that the Port Authority of Huelva is the one that provides the least description of its environmental activities in its annual accounts report, offering data mainly linked to investments made or to be made, without providing any details or reporting on the economic effects of the environmental management it performs. The PAs of Barcelona, Bilbao and Las Palmas report economic figures related to their environmental impact, i.e., they do not merely present financial data, rather they also specify an environmental investment-impact figure, thus quantifying financial aspects of their environmental activities.

4.2. Textual analysis

The textual analysis is one of the ways of analyzing the content, and it has been applied in studies in different disciplines, with accounting and finance being an emerging area of study (Loughran & McDonald, 2016). In this case, we are going to review one of its aspects, legibility, in an attempt to measure the reader's capacity to understand the message that the companies wish to express, using the Gunning-Fog index or fog index as it is known in Spanish (Marco González & Salim Mattar, 2013). In our study, we apply this measure to the environmental information published in the annual accounts of the PAs to determine their level of comprehensibility.

Our aim is to link the linguistic characteristics of the annual report to the related information on the environmental matters of the PAs, this being one of our contributions. In order to measure the legibility of the annual accounts, as demonstrated by the Gunning-Fog index, two measures⁵ were used, namely:

$$M1 \text{ index} = 0.4 \times \left[\left(\frac{\text{Total words}}{\text{Total lines of information}} \right) + 100 \left(\frac{\text{Whole words}}{\text{Total words}} \right) \right]$$

$$\text{Fog index} = 0.4 \times \left[\left(\frac{\text{Total words}}{\text{Total phrases (sentences)}} \right) + 100 \left(\frac{\text{Whole words}}{\text{Total words}} \right) \right]$$

During the first reading, the fog index equation calculated the number of years of education that are necessary to understand the text. In other words, if we have a fog index value of 15, it implies that the reader needs 15 years of education, which is to say a university degree, in order

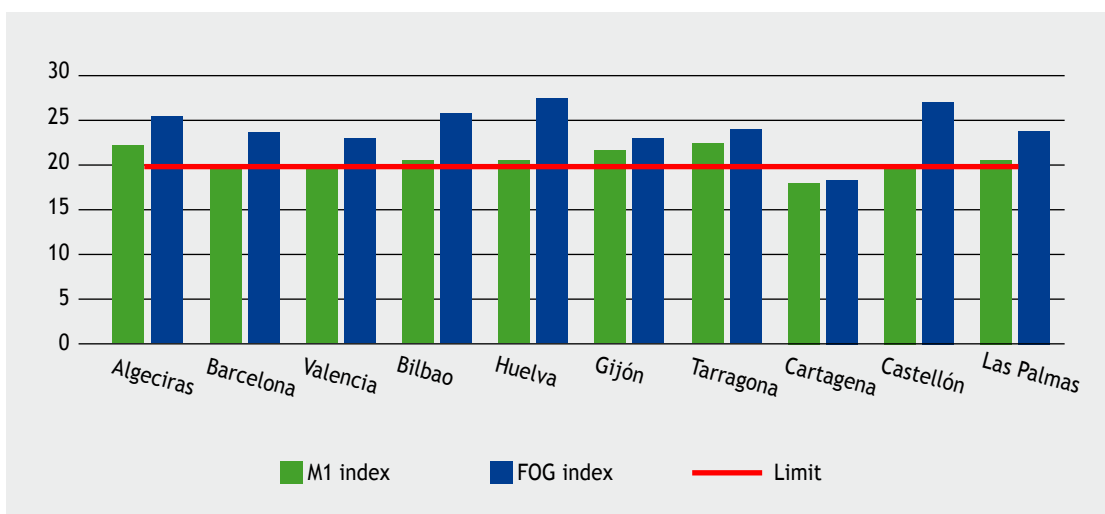
⁵ The index is a function of two variables: average sentence length (in words) and complex words (the number of words with more than three syllables).

Only the Port Authority of Cartagena has data that are reasonably legible

to understand the text during the first reading. Therefore, a text is considered “good”, in terms of the index, if it is less than 15; a text is average if it is between 15 and 20, and is illegible if the index is greater than 20.

As observed in Figure 4, we established the index according to both methods of calculation. The M1 index is related to the number of words per phrase, the number of lines per phrase and whole words. According to this measure, none of the texts is considered to be a “good text”; they are at a medium level of understanding, in other words, they require an average of 20 years of study in order to understand the information contained in them. The texts that use a more technical level of language (with a higher index) are from the PAs of Algeciras and Tarragona. Although it is one of the PAs supplying details in environmental terms, this information is not very comprehensible, since the reader would need approximately 23 years of study and to be familiar with technical language in order to understand it. According to this measure, the best index was obtained by the Port Authority of Cartagena, with a report comprehensibility score of 18.10. Of the three PAs that publish the best environmental information in their annual reports (see Figure 3), the comprehensibility of the reports by the Port Authority of Castellón and Valencia is on the limit that indicates illegibility (19.9 and 20.2). This is a wake-up call, since in spite of being the ones offering the most environmental data, they are not sufficiently clear when transmitting it in their annual reports.

Figure 4
Legibility of the annual reports



Source: Authors' own work

Another measure used to determine the comprehensibility of the environmental information has been the fog index, which measures the number of words as compared to the total number of sentences (Guninng-Fog, 2018). In this case, only the Port Authority of Cartagena has data that are marginally legible. The Port Authorities of Huelva and Castellón have the highest index (27.6 and 27.1, respectively), which leads us to say that said environmental information has a high degree of linguistic complexity. This aspect should be improved so that this information can be relevant and comprehensible in the decision-making process and understood by external users.

The environmental activity that is presented in the annual financial report by the Port Authorities is becoming increasingly more concise

5. Conclusions and final recommendations

The economic and financial focus of the annual accounts influences the information that is supplied and the concepts that are transmitted, endorsed and legitimated. The regulations on the type of data and the details that are published are very generic, so there is a variety of non-uniform possibilities in drafting the report. The environmental information revealed depends on the internalization and the importance of this aspect for each Port Authority, in other words, the level of detail of the environmental information is different in each port organization, and in some PAs, such as Huelva, it is minimal.

Some Port Authorities, especially those that go further in the dissemination required by regulation, that is, those that have internalized environmental management and its dissemination, include in their annual accounts information on their actions and activities performed, specifying the economic-financial data resulting from these acts. Even though it is not the subject of our study, it should be acknowledged that when searching for the data published by the PAs studied, a culture of dissemination was revealed, but with differences at a discursive level in the preparation and dissemination of this information. The advances made so far have made it possible to propose moving onto other scenarios in dissemination, where the appropriateness and projection of the environmental dissemination are debated, along with the possibilities of integrating the reports and audits presented by the organizations.

Based on the authors' own experience, an evolution is evident in the publication of environmental information in the annual accounts. This factor is associated with the establishment and execution of the Social Corporate Responsibility Report (also known as the Sustainability Report or the Environmental Report) by the PAs. As a result, the environmental activity in the annual financial report presented by the Port Authorities is becoming increasingly more concise. However, the annual accounts must make it possible to integrate the data with other types of reports, in order for it to be more complete, concise and to better connect the reports that are written and released. This connection could better situate the information and concentrate efforts, thus preventing the duplication of data and making progress toward their comprehensiveness. One example of this is displaying in the environmental note in the annual accounts the link to the environmental report. This is only done by the PAs of Castellón and Valencia, which in turn are important authorities in our study, since they issue a high volume of quality information on an economic, financial and environmental level.

The information presented on environmental matters uses a technical language of an economic-financial nature, and in particular, the fog index shows that a specialized audience is required that knows this type of language in order to understand what is disseminated. But this does not mean that it is not a good report. When audit institutions like the General Intervention Board of the State Administration (IGAE, according to its initials in Spanish) audit the annual accounts, they can include a proviso or paragraph emphasizing this matter, but this has not been observed in any part of the analyzed reports. Users of this information may be directing their attention to other environmental reports and not necessarily to the annual accounts to obtain information on the environmental management of the PAs, which is yet another reason to establish criteria for integrating the reports issued by the institutions.

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