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Transparency of non-financial information in IBEX35 and DAX30 companies: New integrated reporting

Transparencia de la información no financiera en las empresas del IBEX35 y del DAX30: el nuevo reporting integrado

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Abstract

This research analyzes the transparency web of the non-financial information of companies listed on the main Spanish stock market index (IBEX35) and the main German stock market index (DAX30) and their communication to stakeholders. The study responds to the demand for non-financial, transparent and quality information in European Public Interest Entities (PIE). It seeks the relationships between financial indicators and transparency in the web communication of Environmental, Social and Governance information (ESG) of the companies that make up the two European Stock Exchanges. This is an empirical study descriptive and inferential on regulatory compliance through the analysis of the nonfinancial information communicated on the websites by the 65 listed companies and its validity to prepare the future Integrated-Indicator-Table-CII-FESG or the non-financial statement. In addition, to investigate whether the companies that best communicate this information are also the most economically efficient, the

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economic-financial information from the ORBIS database has been used. The results show a significant relationship between the financial indicators (economic profitability and On Assets and Return on Equity) and the transparency of the non-financial indicators of these companies.

JEL Code: G3, L21
Keywords: non-financial information; listed companies; transparency; corporate governance; public interest entities

Resumen

Esta investigación analiza la transparencia web de la información no financiera de las empresas que cotizan en el principal índice bursátil español (IBEX35) y el principal índice bursátil alemán (DAX30) y su comunicación a los stakeholders. El estudio responde a la demanda de información no financiera, transparente y de calidad en las Empresas de Interés Público (EIP) europeas. Busca las relaciones entre indicadores financieros y la transparencia en la comunicación Web de la información ambiental, social y de gobernanza ASG (Environmental Social Governance) de las empresas que conforman las dos Bolsas de Valores europeas. Se trata de un estudio empírico tanto descriptivo como inferencial sobre el cumplimiento normativo mediante el análisis de la información no financiera que comunican en las páginas webs las 65 empresas cotizadas y su validez para elaborar el futuro Cuadro-Integrado-deIndicadores-CII-FESG o el Estado no financiero. Además, para investigar si las empresas que mejor comunican dicha información son también las más eficientes económicamente se ha utilizado la información económico-financiera de la base de datos ORBIS. Los resultados muestran una relación significativa entre los indicadores financieros (rentabilidad económica y rentabilidad financiera) y la transparencia de los indicadores no financieros de dichas empresas.

Código JEL: G3, L21
Palabras clave: Información no-financiera; empresas cotizadas; transparencia; gobierno corporativo; entidades de interés público

Introduction

The disclosure of non-financial information aims to increase the transparency of organizations by providing information on environmental indicators, social indicators, and good corporate governance to generate confidence among stakeholders, especially investors and consumers. In addition, this information should facilitate the understanding of the company's evolution, its results, and the social impact of its activities. Reputational information at the corporate level is of great interest to investors.

Accordingly, several initiatives have been defined internationally in recent decades. Specifically, the Global Reporting Initiative (GRI, 2019); the International Integrated Reporting Council (IIRC), which promotes communication and value creation of corporations with Integrated Reporting, which in 2010 was a response to the global financial crisis, with solutions to mitigate the risk of future economic collapses, and ten years later with the pandemic worldwide, provides evidence that companies are part of society and reinforces the idea of presenting more integrated reports (International Integrated

Reporting Council, 2021); the United Nations Global Compact; the Guidelines of the Organization for Economic Cooperation and Development (OECD, 2015); the ISO 26000 standard (ISO, 2019b); the Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy of the International Labour Organization; and the Sustainability Accounting Standards Board (SASB, 2019) in the case of American companies, with precise indications for different types of industry.

In the European Union, the Eco-Management and Audit System is a high-quality management tool developed by the European Commission for companies and other organizations to assess, report on, and improve their environmental performance.

In Spain, a regulatory framework has been developed based on the Non-Financial Reporting Directive (Directive 95/ 2014/EU), which requires Public Interest Entities (PIEs) and large companies as of 2018, concerning the 2017 financial year, to include in the management report a non-financial statement containing information on the company's situation, the impact of its activity on environmental and social issues, personnel, respect for human rights, and the fight against corruption and bribery

The transposition of Directive 2014/95/EU into Spanish law has meant important changes in the Spanish legal system. Law 22/2015, of July 20, 2015, on Account Auditing of non-financial information and diversity, was approved, followed by Royal Decree-Law 18/2017, of November 24, which amends the Commercial Code and broadens the content of the annual corporate governance report of listed companies.

In this context, the Spanish Association of Accounting and Business Administration (AECA, 2018) (Spanish: Asociación Española de Contabilidad y Administración de Empresas) has developed the model on Integrated Information collected in the Integrated Scoreboard (CII-FESG) and its taxonomy XBRL as an open standard, accepted by regulators such as the CNMV and by other European regulators, which provides technological support to create integrated reports using financial, environmental, social, and corporate governance indicators.

More recently, Law 11/2018, of December 28, amending the Commercial Code on non-financial information and diversity, was passed. This law extends the number of companies obligated to present the non-financial information statement for individual and consolidated companies as of the 2018 fiscal year. In addition, the 2021 Directive on sustainability, which is in continuous change, improves transparency by showing the reality of organizations with integrated information using sustainability indicators.

Therefore, the importance of organizations' transparent communication of environmental, social, and governance information leads to an analysis of their information transparency, accountability, and, in short, their good corporate governance. IBEX35 and DAX30 are Public Interest Companies (PIC) subject to European and international regulations. They must provide information on economic efficiency indicators and non-financial indicators or ESG (Environmental, Social, and Governance) information.

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To this end, the objective of this research is twofold. Firstly, to analyze the transposition of Directive 2014/95/EU into the respective legal systems, highlighting the transparency of the non-financial information of the companies listed on these two stock market indices and its communication to stakeholders. Secondly, to find out whether companies with better financial indicators are more transparent in non-financial indicators, with correlations that enable the recognition of adequate corporate governance policies (Caravaca Sánchez et al., 2012).

Theoretical framework

For some time now, research has been conducted assessing the socially responsible behavior of companies in responsible resource consumption, environmental protection, and proper management of human resources in tune with ISO 26000 (ISO, 2019b) (Sitnikov & Bocean, 2013). In this same line of research, other authors (Janssen et al., 2015) developed the idea that effective management of economic crises for companies is related to investing in Corporate Social Responsibility (CSR) initiatives that emerge significantly in periods of crisis. Specifically, following the financial crisis of 2008, it was found that it was not only a matter of a change in the economic cycle but that the lack of values and ethical principles in the operation of organizations should be resolved with more transparency in business management (Melé et al., 2011) and with a better corporate reputation (Gonzalez-Ramos et al., 2014). Hence, the publication of CSR information has increased and "integrated reporting" has evolved (Cheng et al., 2014).

Moreover, in a globalized society, business ethics is essential, and the common good derived from it is in tune with CSR as specified by ISO 26000 (Nunes, 2017), so it is necessary that the emerging trend of more credibility and legitimacy of the companies proliferates and is consolidated in the non-financial information guideline in Directive 2014/95/EU and in its transposition to the Spanish legal system. Some papers question the usefulness of CSR-related non-financial information due to its poor quality and limited use by financial analysts (Krasodomska & Cho, 2017).

Efficiency in corporate communication is conditioned by the non-existence of a common meaning and a generally accepted definition of "non-financial information" so that in the academic literature, changes in the terminology of "non-financial information" or a certain mandatory guideline for such "non-financial information" have been proposed (Haller et al., 2017).

Nevertheless, non-financial information is of great value in providing transparency and trust in the company to society and its stakeholders at environmental, social, and corporate governance levels (Trevlopoulos et al., 2021).On the other hand, IBEX35 and DAX30 companies as EIP must follow the provision of Directive 2014/95/EU about non-financial information, and recent studies point out that having non-financial information improves competitiveness and promotes the disclosure of sustainability indicators in European stock companies (Taliento et al., 2019). In the academic literature, changes in the terminology on "non-financial information" have been proposed (Haller et al., 2017), which will be resolved in the future 2021 directive that recommends "sustainability indicators" as the appropriate terminology. This research uses the wording of the "non-financial information" established and collected in the Integrated Scoreboard CII-FESG and its XBRL taxonomy (AECA, 2018). The new 2021 directive is very much in line with the report on proposals for EU sustainability reporting regulations with various EFRAG proposals on the scope and structure of future Sustainability Reporting standards to achieve EU policy objectives in line with the European green pact. The EU is strongly interested in this information, as evidenced by the European Green Deal and the EU climate strategy. Moreover, sustainability reports provide relevant, accurate, comparable, and reliable information on the company's material sustainability impacts and risks and opportunities for value creation, so as to improve the company's sustainability performance (Adams & Abhayawansa, 2021).

Information transparency and online disclosure are essential to facilitate communication with stakeholders and identify the corporate reputation of companies (Adegbite et al., 2019). In the case of Spain, non-financial information on websites was scarce, according to the study by Escamilla Solano et al. (2016). Nevertheless, more recent studies point to different results between public and private companies and among listed companies (Andrades Peña & Larrán Jorge, 2019). Also, higher transparency rates are detected when companies have the sustainability report in advance (Sierra-Garcia et al., 2018). In addition, corporate social responsibility reporting is evolving toward integrated reporting with aggregated financial and non-financial results (Marín Andreu & Ortiz-Martínez, 2018). Other studies support a significant relation between economic indicators and communication of non-financial indicators (Purves et al., 2015; Dobrovic et al., 2018; Benková et al., 2020), as well as a clear relation between disclosure of non-financial indicators and higher Corporate Social Responsibility (Jackson et al., 2020). In addition, studies focused on corporate governance indicators show a positive relation between non-financial communication and the company's profitability due to better forecasts in results and greater confidence of analysts and investors (Arjoon, 2017), facilitating business management, corporate reputation, and the generation of trust. Other recent studies demonstrate the positive impact of non-financial indicators on economic indicators for European stock companies, concluding that non-financial information is a determinant of business competitiveness (Taliento et al., 2019).

Regarding other European stock indices, studies on the harmonization of non-financial reporting regulation in Europe point to an increase in the consistency, transparency, and comparability of non-financial information disclosed by companies in different stock indices, including the DAX 30 (Testarmata et al., 2020) with a typology of non-financial information revealed in three blocks: environmental, social, and corporate governance (Sivarajah et al., 2020).

Internationally, some studies analyze the positive relation between non-financial reporting indicators, defined by the GRI, and companies' market value (Kaspereit & Lopatta, 2016). Other research analyzes and compares the type of non-financial information published to obtain an index of disclosure of this information (Ortas et al., 2015; Nurhayati et al., 2016).

The long-term mission of the International Integrated Reporting Council (IIRC) is to incorporate IR into standard business practice in both the public and private sectors. At the same time, one of the objectives of an integrated report is to explain to suppliers of financial capital how an organization creates value over time (International Integrated Reporting Council, IIRC, 2013). Nonetheless, the concept of value creation is not sufficiently narrowly defined, and as a rule, financial capital suppliers emphasize the potential for future cash flows and sustainable financial returns (Adams, 2015).

Under the new IR model, the value creation of companies is to be measured in both financial and social terms. To date, however, accountants, IR sustainability practitioners, and researchers have paid little attention to how this could be done under a multi-capital model (financial and social capital). Accordingly, to ensure the credibility of the integrated reports, one of the important issues to be advanced is the process of determining materiality and identifying risks that improve the quality of the information for the non-financial statement and integrated reporting.

Regarding Corporate Governance, different specialized reports indicate that Boards of Directors should devote more time to matters related to the company's strategy (McKinsey Board Services, 2016). In addition, they consider it important to correctly identify business risks, with special attention to risks arising from technology and cybersecurity, and also recognize the necessity of diversity in Boards of Directors (PriceWaterhouseCoopers, 2018).

Other research indicates that Good Corporate Governance positively impacts the company's profitability (GABV, 2014; Arjoon, 2017), with more predictable results and more confidence from analysts and investors (Brown & Caylor, 2006). To this end, transparency in the information of Corporate Governance indicators is necessary for better business management, better corporate reputation, and greater generation of trust (Melé et al., 2011; Gonzalez-Ramos et al., 2014). A good channel for communication, transparency, and trust is company websites.

In 2016 the European Commission created an Expert Group on Sustainable Finance. Their report identifies sustainability indicators, details investor obligations to achieve a more sustainable financial system, suggests sustainability disclosure of financial institutions and companies, and presents measures to internationalize sustainability.

Despite this, international standards such as ISO 9001 on quality (IOS, 2018b), ISO 14001 on environmental management (IOS, 2019a), and ISO 45001 on occupational health and safety (IOS, 2018a), which make up the integrated management systems of most large companies, contribute decisively to

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facilitating this non-financial information. Their certifications guarantee the accuracy of non-financial information, especially regarding quality, the environment, and occupational risk prevention. Also, the ISO 26000 standard (ISO, 2019b)(IOS, 2019b) on Corporate Social Responsibility (CSR) management systems and the IQNet SR10 certification (IQNet, 2011) endorse this non-financial information. This non-financial information is useful to stakeholders with prior independent verification.

Therefore, according to the stated objectives, the review of the theoretical framework and the variables considered as determinants to define the transparency of non-financial and corporate governance information of two European stock market indices (IBEX35 and DAX30), the following hypotheses are formulated:

H1: IBEX35 and DAX30 companies comply with the provisions of Directive 2014/95/EU on non-financial reporting.

H2: Mandatory non-financial reporting will provide reliable and transparent information for stakeholders.

H3: IBEX35 and DAX30 companies with greater transparency in non-financial indicators (INOFI) (Spanish: Indicadores No Financieros) also have better financial indicators and are more economically efficient.

H4: There is a significant relation between financial indicators and the INOFI Ranking.

H5: The economic profitability (ROA) of IBEX35 and DAX30 companies negatively affects the disclosure of non-financial information.

Methodology

Following the proposed objectives and to contrast the formulated hypotheses, an exploratory, descriptive, and analytical study of the websites of the 65 companies that make up the IBEX35 and DAX30 stock market indices was carried out, with a map of non-financial indicators found on their websites as of March 2019. Specifically, the indicators that are explored and analyzed are those defined in the Integrated Scoreboard CII-FESG and its taxonomy XBRL (eXtensible Business Reporting Language) of the Spanish Association of Accounting and Business Administration (AECA, 2018), as it is an open standard that is accepted by European regulators (See Table A1 in the Appendix). An exhaustive analysis is made through each company’s website to extract data on the 27 indicators and identify the presence or absence of each one on those websites. If the information is present, a value of 1 is assigned, and if the information is not present, a value of 0 is assigned.

With this information, a map of non-financial information indicators reported on the websites of Spanish and German companies as of March 2019 is drawn up, which provides information on whether such non-financial information is in line with the provisions of (Directive 95, 2014/EU) and its transposition to the Spanish legal system, H1.

Next, and concerning H2, a transparency/disclosure index of non-financial indicators is calculated for each company with reference to March 2019. In order to determine this index, the Transparency Index (ITA) (Spanish: Índice de Transparencia) methodology defined by Transparency International Spain (2019) was used. That is, 100 points are assigned to the company that reports 100% of the 27 indicators and a proportional score to each IBEX35 and DAX30 company based on their respective non-financial indicators published on their websites.

Next, to contrast H3, it was analyzed whether IBEX35 companies and DAX 30 companies that are economically more efficient and have better financial indicators also have greater web disclosure of non-financial indicators. To this end, the Iberian Balance Sheet Analysis System -SABI-(Spanish: Sistema de Análisis de Balances Ibéricos) database (Bureau Van Dijk & INFORMA D&B, 2017) was used by applying the following filters:

- For each of these companies, the financial statements of their annual accounts for the fiscal year 2019 have been obtained.
- The following ratios have been defined and calculated for these companies: indebtedness (external financing / total financing); short-term solvency (current assets / current liabilities); financial profitability (ROE) (profit / net equity); economic profitability (ROA) (earnings before interest and taxes / total assets).
- A ranking of companies has been prepared for each financial indicator, assigning to each company in each ratio the value corresponding to the order number it occupies among the 65 in such a way that in the non-financial indicators, two companies with the same value occupy the same position. From this ranking, the same number of companies will be selected for the podium in the financial indicators as in the ranking of the non-financial indicators.

Statistical associations between financial indicators and transparency in non-financial indicators were then analyzed using the SPSS version 24 statistical tool. To determine whether there is a linear association between two continuous quantitative variables, Pearson's Correlation Analysis was performed to test H4.

The research analysis revealed the existence of a significant association between financial variables and non-financial transparency indicators, and an attempt was made to confirm whether this relation is explanatory by formulating an ordinary least squares linear regression model using the statistical tool Gnu Regression, Econometrics and Time-series Library (GRETL).

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Results of the study

After detailing the applicable regulatory framework, the review of the literature on the subject, and applying the descriptive methodology and financial and non-financial tracking for the companies of the IBEX35 and DAX30 stock indices, the results and conclusions are presented.

Web visibility and communication of non-financial information in IBEX35 and DAX30 companies

The analysis of the non-financial web information of the IBEX35 and DAX30 companies reveals that the data are dispersed, difficult to access, and with different links on each company's website. Table 1 shows the scores obtained for each of the 27 items analyzed in each stock market index expressed in percentages. Thus, each company in the corresponding stock market index adds a score divided by the total number of companies in the index, which, multiplied by one hundred, gives the score for each item.

Regarding the environmental indicators expressed in different units of measurement, it can be seen that the two stock market indices have similar scores. Nevertheless, the companies in the DAX30 report complete information on energy efficiency and emissions indicators. The DAX30 companies also score better on the waste management efficiency indicator.

Regarding social indicators, the two indices report on employees and gender diversity. Regarding senior management positions, job stability and employee training, the IBEX35 companies provide more information. Nevertheless, when it comes to details on net job creation and employee turnover, it is the DAX30 companies that report the most information. It should be noted that, according to the exploratory study of the websites, there is evidence of an increase in the employment of women and disadvantaged groups.

In terms of corporate governance indicators, all the companies report the number of directors, and the percentage of independent directors is over 50% on the Board. Nonetheless, most Boards of Directors do not have a Corporate Social Responsibility Committee.

Regarding gender diversity, the presence of women on the Board of Directors is reported. Moreover, in all companies, reference is made to audit committees and nomination committees, as well as to Board meetings and remuneration.

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Table 1
Companies reporting data on non-financial indicators via WEB IBEX35 and DAX30 % S/Total

	% IBEX 35	% DAX 30
Environmental indicators		
Energy consumption	94	100
Water consumption	80	100
Pollution emissions	94	100
Waste generation	69	83
Managed waste	46	57
Reused waste	49	23
Social indicators		
Employees	100	100
Employee gender diversity	97	100
Senior management positions	31	0
Gender diversity in senior management	80	0
Job stability	91	63
Absenteeism	69	60
Employee turnover	77	83
Net job creation	31	73
Length of service	54	40
Employee training	100	77
Corporate Governance Indicators		
Board Members	100	100
Independent Board Members	100	23
CSR Board Members	11	0
Executive committee	66	33
Audit Committee	100	100
Nominating Committee	100	100
Board meetings	100	100
Total remuneration of the Board	100	100
Gender diversity on the Board	100	100

Source: created by the authors 2021

Ranking of IBEX35 and DAX30 companies according to web visibility / transparency of non-financial information

The 65 companies in the IBEX35 and DAX30 were ranked from the highest to the lowest number of non-financial indicators reported on their websites, and the percentage they represent of the total of the 27 indicators defined.

Of the 65 companies, 13 report more than 80% of the proposed indicators, 31 companies report more than 70%, and 21 companies report 50% of information on non-financial indicators.

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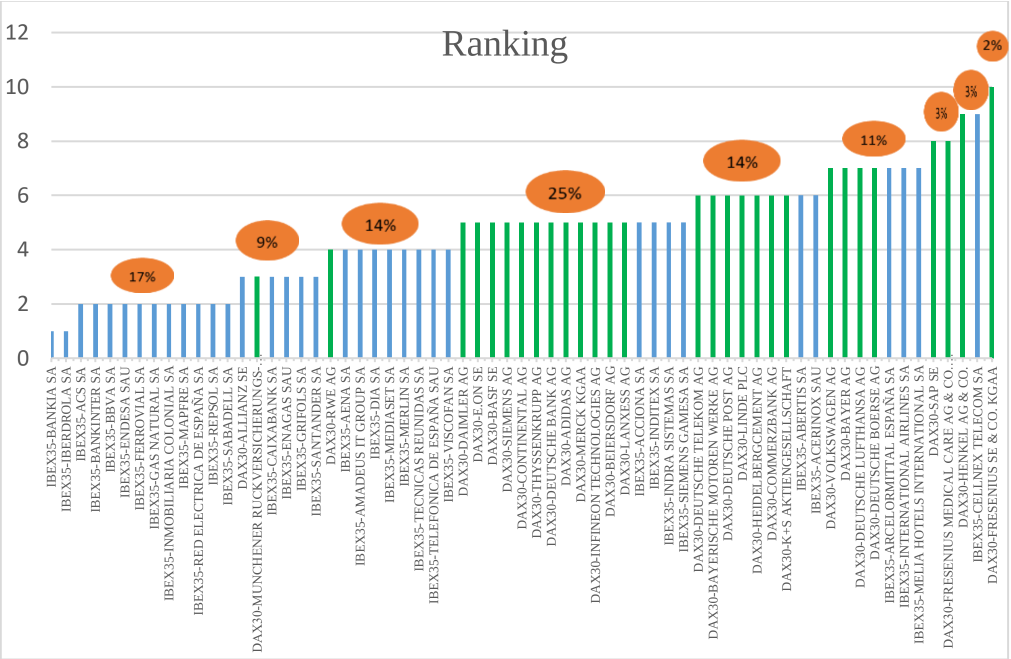

Figure 1. Transparency ranking of non-financial information
Source: created by the authors 2021

Figure 1 shows that only two IBEX35 companies, 3%, are in the first level by the number of available indicators with 85.2 points out of a possible 100 (Table 2). In the second level are 11 Spanish companies, representing 17%, with a score of 81.48 points. The third level, with 77.78 points, was reached by six companies, five of which belong to the IBEX35 and one to the DAX30, representing 9% of the total analyzed.

Therefore, the first three levels of the INOFI transparency ranking are reached by 29% of the companies, that is, 19 companies out of the 65 analyzed, only two of which belong to the DAX30. It can also be seen that none of the companies in the IBEX-35 and DAX30 have achieved the 100 possible points in transparency.

On the fourth step of the ranking are 9 companies, one of which belongs to the DAX30. In the fifth level of the hierarchy are 12 German and 4 Spanish companies, representing more than 70% of INOFI's web visibility. Therefore, the first level of greater transparency is made up of 2 companies out of 65 (3%), the second level is made up of 11 companies (17%), and the third level is made up of 6 companies (9%), 18 of which are listed on the IBEX35.

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Table 2
Non-financial transparency index. Percentage and number of existing indicators over total and Ranking/Level

Level	Company	Transparency	Company	Transparency	Level
1	IBEX35-BANKIA SA	85.2% (23/27)	DAX30-THYSSENKRUPP AG	70.4% (19/27)	5
1	IBEX35-IBERDROLA SA	85.2% (23/27)	DAX30-DEUTSCHE BANK AG	70.4% (19/27)	5
2	IBEX35-ACS SA	81.5% (22/27)	DAX30-ADIDAS AG	70.4% (19/27)	5
2	IBEX35-BANKINTER SA	81.5% (22/27)	DAX30-MERCK KGAA	70.4% (19/27)	5
2	IBEX35-BBVA SA	81.5% (22/27)	DAX30-INFINEON TECHNOLOGIES AG	70.4% (19/27)	5
2	IBEX35-ENDESA SAU	81.5% (22/27)	DAX30-BEIERSDORF AG	70.4% (19/27)	5
2	IBEX35-FERROVIAL SA	81.5% (22/27)	DAX30-LANXESS AG	70.4% (19/27)	5
2	IBEX35-GAS NATURAL SA	81.5% (22/27)	IBEX35-ACCIONA SA	70.4% (19/27)	5
2	IBEX35-INMOBILIARIA COLONIAL SA	81.5% (22/27)	IBEX35-INDITEX SA	70.4% (19/27)	5
2	IBEX35-MAPFRE SA	81.5% (22/27)	IBEX35-INDRA SISTEMAS SA	70.4% (19/27)	5
2	IBEX35-RED ELECTRICA DE ESPAÑA SA	81.5% (22/27)	IBEX35-SIEMENS GAMESA SA	70.4% (19/27)	5
2	IBEX35-REPSOL SA	81.5% (22/27)	DAX30-DEUTSCHE TELEKOM AG	66.7% (18/27)	6
2	IBEX35-SABADELL SA	81.5% (22/27)	DAX30-BAYERISCHE MOTOREN WERKE AG	66.7% (18/27)	6
3	DAX30-ALLIANZ SE	77.8% (21/27)	DAX30-DEUTSCHE POST AG	66.7% (18/27)	6
3	DAX30-MUNCHENER RUCK…	77.8% (21/27)	DAX30-LINDE PLC	66.7% (18/27)	6
3	IBEX35-CAIXABANK SA	77.8% (21/27)	DAX30-HEIDELBERGCEMENT AG	66.7% (18/27)	6
3	IBEX35-ENAGAS SAU	77.8% (21/27)	DAX30-COMMERZBANK AG	66.7% (18/27)	6
3	IBEX35-GRIFOLS SA	77.8% (21/27)	DAX30-K+S AKTIENGESELLSCHAFT	66.7% (18/27)	6
3	IBEX35-SANTANDER SA	77.8% (21/27)	IBEX35-ABERTIS SA	66.7% (18/27)	6
4	DAX30-RWE AG	74.1% (20/27)	IBEX35-ACERINOX SAU	66.7% (18/27)	6
4	IBEX35-AENA SA	74.1% (20/27)	DAX30-VOLKSWAGEN AG	63% (17/27)	7
4	IBEX35-AMADEUS IT GROUP SA	74.1% (20/27)	DAX30-BAYER AG	63% (17/27)	7
4	IBEX35-DIA SA	74.1% (20/27)	DAX30-DEUTSCHE LUFTHANSA AG	63% (17/27)	7
4	IBEX35-MEDIASET SA	74.1% (20/27)	DAX30-DEUTSCHE BOERSE AG	63% (17/27)	7
4	IBEX35-MERLIN SA	74.1% (20/27)	IBEX35-ARCELORMITTAL ESPAÑA SA	63% (17/27)	7
4	IBEX35-TECNICAS REUNIDAS SA	74.1% (20/27)	IBEX35-INTERNATIONAL AIRLINES SA	63% (17/27)	7
4	IBEX35-TELEFONICA DE ESPAÑA SAU	74.1% (20/27)	IBEX35-MELIA HOTELS INTERNATIONAL SA	63% (17/27)	7
4	IBEX35-VISCOFAN SA	74.1% (20/27)	DAX30-SAP SE	59.3% (16/27)	8

5	DAX30-DAIMLER AG	70.4% (19/27)	DAX30-FRESENIUS MEDICAL CARE AG & CO	59.3% (16/27)	8
5	DAX30-E.ON SE	70.4% (19/27)	DAX30-HENKEL AG & CO.	55.6% (15/27)	9
5	DAX30-BASF SE	70.4% (19/27)	IBEX35-CELLNEX TELECOM SA	55.6% (15/27)	9
5	DAX30-SIEMENS AG	70.4% (19/27)	DAX30-FRESENIUS SE & CO. KGAA	51.9% (14/27)	10
5	DAX30-CONTINENTAL AG	70.4% (19/27)			

Source: created by the authors, 2021

Analogy between the best companies in the IBEX35/DAX30 by non-financial transparency and by financial indicators

In addition to the transparency ranking, the balanced scorecard is completed with the results of the financial indicators of financial profitability (ROE) and economic profitability (ROA). Each indicator has been ordered from the highest to lowest indicator value in each company. In addition, the position of each IBEX35 and D

X30 company in terms of economic profitability and financial profitability has been numbered in such a way that the companies with the best value occupy the first positions and companies with the same value occupy the same place.

Once each company's financial and INOFI transparency indicators were available (Table 3), each was ordered according to their closeness to the desirable and possible values. Transparency is based on the highest value (number of points obtained within the potential) and the financial indicators of economic and financial profitability are based on the value received.

To select the best companies in terms of transparency level in INOFI, those with a transparency score equal to or higher than 77 points have been taken as a reference. In other words, the 19 companies in the top three levels of the transparency ranking, representing 29%, were considered the best. The companies in the top 29% of the financial indicators have been singled out. Thus, the best companies in ROA rank from 1 to 19 and ROE from 1 to 18.

Table 3
Relation between Transparency Ranking and Ranking by Financial Indicators

ID	Company	INOFI RANKING	ROA RANKING	ROE RANKING	ID	Company	INOFI RANKING	ROA RANKING	ROE RANKING
1	IBEX35-BANKIA SA	1	52	61	34	DAX30-THYSSENKRUPP AG	5	49	59
2	IBEX35-IBERDROLA SA	1	2	2	35	DAX30-DEUTSCHE BANK AG	5	54	60
3	IBEX35-ACS SA	2	8	12	36	DAX30-ADIDAS AG	5	12	16
4	IBEX35-BANKINTER SA	2	35	15	37	DAX30-MERCK KGAA	5	31	47
5	IBEX35-BBVA SA	2	5	7	38	DAX30-INFINEON TECHNOLOGIES AG	5	20	40
6	IBEX35-ENDESA SAU	2	4	1	39	DAX30-BEIERSDORF AG	5	14	27
7	IBEX35-FERROVIAL SA	2	30	39	40	DAX30-LANXESS AG	5	34	42
8	IBEX35-GAS NATURAL SA	2	7	3	41	IBEX35-ACCIONA SA	5	53	62
9	IBEX35-INMOBILIARIA COLONIAL SA	2	46	55	42	IBEX35-INDITEX SA	5	6	8
10	IBEX35-MAPFRE SA	2	54	63	43	IBEX35-INDRA SISTEMAS SA	5	41	24
11	IBEX35-RED ELECTRICA DE ESPAÑA SA	2	22	14	44	IBEX35-SIEMENS GAMESA SA	5	43	31
12	IBEX35-REPSOL SA	2	16	18	45	DAX30-DEUTSCHE TELEKOM AG	6	28	30
13	IBEX35-SABADELL SA	2	1	5	46	DAX30-BAYERISCHE MOTOREN WERKE	6	40	41
14	DAX30-ALLIANZ SE	3	54	33	47	DAX30-DEUTSCHE POST AG	6	23	20
15	DAX30-MUNCHENER RUCK…	3	54	43	48	DAX30-LINDE PLC	6	37	52
16	IBEX35-CAIXABANK SA	3	49	44	49	DAX30-HEIDELBERGCEMENT AG	6	30	48
17	IBEX35-ENAGAS SAU	3	21	19	50	DAX30-COMMERZBANK AG	6	54	53
18	IBEX35-GRIFOLS SA	3	10	23	51	DAX30-K+S AKTIENGESELLSCHAFT	6	45	57
19	IBEX35-SANTANDER SA	3	3	4	52	IBEX35-ABERTIS SA	6	48	58
20	DAX30-RWE AG	4	47	11	53	IBEX35-ACERINOX SAU	6	38	46
21	IBEX35-AENA SA	4	17	17	54	DAX30-VOLKSWAGEN AG	7	39	35
22	IBEX35-AMADEUS IT GROUP SA	4	9	9	55	DAX30-BAYER AG	7	32	45
23	IBEX35-DIA SA	4	18	6	56	DAX30-DEUTSCHE LUFTHANSA AG	7	36	25
24	IBEX35-MEDIASET SA	4	13	26	57	DAX30-DEUTSCHE BOERSE AG	7	54	21
25	IBEX35-MERLIN SA	4	47	56	58	IBEX35-ARCELORMITTAL ESPAÑA SA	7	15	29
26	IBEX35-TECNICAS REUNIDAS SA	4	27	10	59	IBEX35-INTERNATIONAL AIRLINES SA	7	26	50
27	IBEX35-TELEFONICA DE ESPAÑA SAU	4	14	13	60	IBEX35-MELIA HOTELS INTERNATIONAL	7	42	49
28	IBEX35-VISCOFAN SA	4	11	28	61	DAX30-SAP SE	8	54	34
29	DAX30-DAIMLER AG	5	46	51	62	DAX30-FRESENIUS MEDICAL CARE AG	8	25	38
30	DAX30-E.ON SE	5	44	37	63	DAX30-HENKEL AG & CO.	9	19	32
31	DAX30-BASF SE	5	33	22	64	IBEX35-CELLNEX TELECOM SA	9	50	54
32	DAX30-SIEMENS AG	5	29	36	65	DAX30-FRESENIUS SE & CO. KGAA	10	24	36
33	DAX30-CONTINENTAL AG	5	51	59					

Source: created by the authors, 2021

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Table 3 shows that of the 19 companies with the best INOFI, 9 belonging to the IBEX35 are also among those with the highest ROA. Regarding financial profitability, 11 IBEX35 companies are among the best INOFI transparency rankings. Most notably, 8 companies are simultaneously ranked among the best INOFI, ROA, and ROE. That is to say that the total correspondence and analogy in the Integrated Scoreboard is only obtained by 8 companies out of the 19 by being simultaneously among the best in INOFI, ROA, and ROE. At the same time, it is observed that the companies below level 3 of transparency in INOFI also coincide less in the number of financial indicators.

Statistical associations between financial indicators and their ranking and transparency in INOFI and its ranking

Once the analysis of recognition and analogies between financial indicators and transparency in INOFI had been performed, a study of statistical associations was conducted using parametric correlations between the variables and after testing the normality of the distribution. The results in Table 4 show a significant association between the variable "ROA RANKING" simultaneously with the value of the transparency indicator with a Pearson correlation coefficient of -0.269 and with the INOFI Ranking of 0.269, both with a significance level of 3%. In other words, a variation in the ROA RANKING will generate a variation of almost -27% in transparency in INOFI and 27% in the INOFI Ranking, with the probability of being wrong being less than 3%.

Table 4
Association between financial and non-financial indicators

Correlations		INOFI RANKING	INOFI
INOFI RANKING	Pearson correlation	1	-1.000**
	Sig. (bilateral)		0.000
	N	65	65
ROA RANKING	Pearson correlation	.269*	-.269*
	Sig. (bilateral)	0.030	0.030
	N	65	65
ROE RANKING	Pearson correlation	.351**	-.351**
	Sig. (bilateral)	0.004	0.004
	N	65	65
INOFI	Pearson correlation	-1.000**	1
	Sig. (bilateral)	0.000	
	N	65	65
ROE	Pearson correlation	-.290*	.290*
	Sig. (bilateral)	0.020	0.020
	N	64	64

*. The correlation is significant at the 0.05 level (bilateral).
**. The correlation is significant at the 0.01 level (bilateral).
Source: created by the authors, 2021

There is also a significant association between ROE, ROE Ranking, INOFI, and INOFI Ranking. In other words, ROE Ranking correlates directly with INOFI Ranking and inversely with INOFI with a correlation coefficient of 0.351 and a significance of less than 1%. ROE also correlates directly with INOFI and inversely with INOFI Ranking (0.290) and a significance of 2%.

Hypothesis testing: Predictive model

With the findings on associations between financial variables and transparency of non-financial variables, a predictive model has been formulated to verify whether the value of the indicator of transparency of non-financial information can be explained in terms of the importance of financial indicators (Economic Profitability and Financial Profitability). For this purpose, the statistical software GRETL (GNU Regression, Econometrics and Time-series Library ver 2017d) was used to develop several ordinary least squares linear regression models.

First, a model that explained the independent variable (INOFI) as a function of all the other variables (Economic Profitability and Financial Profitability) was chosen. In Model 1: OLS, observations 1-65 have been used, and missing or incomplete remarks (1), (n = 64) have been removed. Dependent variable: INOFI. Standard deviations are robust to heteroscedasticity, HC1 variant.

Table 5
Model 1 OLS Linear Regression

	Coefficient	Standard deviation	Statistic t	p-value
const	80.4893	1.60405	50.18	<0.0001 ***
ROA	−0.372692	0.0448111	−8.317	<0.0001 ***
ROE	0.00620010	0.00358653	1.729	0.0889 *

Mean of the dep. vble.	71.38281	S.D. of the dep. vble.	7.552369
Sum of quad. waste	1290.395	S.D. of the regression	4.599349
R-squared	0.640900	R-squared corrected	0.629126
F(2, 61)	61.18138	P-value (of F)	2.64e-15
Log-likelihood	−186.9343	Akaike Criteria	379.8686
Schwarz Criteria	386.3453	Hannan-Quinn Criteria	382.4201

Source: created by the authors, 2021

In Model 1, the p-values for the ROA variable are less than 0.0001, and for the ROE variable, they are less than 0.09. Consequently, the null hypothesis is rejected and explanatory value is given to the independent variables ROA and ROE. In addition, the coefficient of determination, R2, is 64%, enabling hypothesis H4 to be tested. Therefore, in at least 64% of the cases, these variables are related to transparency in INOFI's non-financial information. In other words, the proportion of the variation in the INOFI variable is explained by the combination of the ROA and ROE variables with 64%.

In searching for an alternative model that is more explanatory than Model 1, INOFI Ranking has been considered a dependent variable using Model 2, obtaining the results shown in Table 6.

Table 6
Model 2 OLS Linear Regression

	Coefficient	Standard deviation	Statistic t	p-value	
const	2.27316	0.433527	5.243	<0.0001	***
ROA	0.100728	0.0121111	8.317	<0.0001	***
ROE	−0.00167570	0.000969333	−1.729	0.0889	*

Mean of the dep. vble.	4.734375	S.D. of the dep. vble.	2.041181
Sum of quad. waste	94.25819	S.D. of the regression	1.243067
R-squared	0.640900	R-squared corrected	0.629126
F(2, 61)	61.18138	P-value (of F)	2.64e-15
Log-likelihood	−103.2010	Akaike Criteria	212.4020
Schwarz Criteria	218.8787	Hannan-Quinn Criteria	214.9535

Source: created by the authors, 2021

In this case, the value of the coefficient of determination, R2, is similar to Model 1, 64%, so, based on the predictive capacity of the lower Akaike criterion 212.4 of Model 2 compared to 379.9 of Model 1, Model 2 can be proposed as the most appropriate model for testing the hypotheses.

Conclusions and discussion

According to the objectives set out, in this descriptive and analytical research on transparency in the disclosure of non-financial information of the companies in the benchmark stock market indices of Spain and Germany, it is found that the companies have been adapting their reports to the recommendations of Directive 2014/95/EU.

The 2018 financial year saw the entry into force of the Directive requiring PIEs with more than 500 employees and large companies to disclose non-financial information as the basic model for transparency in the EU. In addition, in Spain, with the approval of Law 11/2018, of December 28, the number of companies obligated to present the Statement of Non-Financial Information has been extended for both individual and consolidated companies as of the 2018 financial year. Nevertheless, despite this regulatory framework, the results of this study show that IBEX35 and DAX30 companies have scarce, heterogeneous, scattered, inaccessible, and outdated non-financial information websites. This situation affects the comparability of the INOFI between companies. It shows the effort that IBEX35 and DAX30 companies must make to achieve the desired homogeneity and comparability required by the European Directive and the visibility of their websites' Environmental, Social, and Governance (ESG) information.

Regarding the visibility and transparency of environmental indicators on the web, the study shows that they need to improve in the homogenization of the units of measurement to enable comparison between companies. In other words, the companies must present energy efficiency, emissions, and waste management indicators expressed in homogeneous units continuously over time. Specifically, IBEX 35 companies use different units of measurement for energy consumption, water consumption, polluting emissions, and waste management, and more than 60% of the companies provide this type of information. As for the DAX30, companies also offer different units of measurement for energy consumption, water consumption, polluting emissions, and waste management, with more than 80% of the companies providing this information.

Regarding social indicators, the results indicate that employees, gender diversity, and labor stability of the companies are close to those established in the regulations analyzed, although there is still room for improvement. Specifically, for the IBEX35, all the companies report the number of employees and more than 40% detail gender diversity, with room for improvement. Regarding labor stability, 70% of the companies have 90% of their employees with indefinite contracts. In the DAX30, all companies report the number of employees and gender diversity. Regarding labor stability, more than 50% of the companies have permanent contracts with 90% of their workers. The indicators for senior management, job creation, absenteeism, and length of service need to be improved as a result of the lack of information due to the last economic crisis and the restructuring of the workforce, with few new hires.

Regarding corporate governance indicators, IBEX35 companies have increased the presence of women on the Boards of Directors to comply with the Good Governance Code recommendation that 30% of staff should be women, although some companies still do not comply and show weaknesses in this area. On the other hand, the information on independent directors and attendance at the General Shareholders' Meeting is detailed, and there are few companies with CSR directors. For the DAX30 companies, information on directors is also provided, but there is room for improvement in the information on independent directors, especially on CSR directors, although they detail the Board meetings and their gender diversity. The study results highlight the importance for these companies of good corporate governance that responds to legal and social requirements and transmits the business philosophy of the organizations. In particular, it has been highlighted that some corporate governance principles, such as the existence of audit committees, are made public by all companies as this creates trust among various stakeholders. Gutiérrez Ponce et al. (2019) points out: "It has been shown that corporate governance involves a set of regulations, principles, and procedures that govern the structure and functioning of a company's governing bodies. Furthermore, weak corporate governance may indicate a lack of transparency and inadequate measures in corporate behavior on the part of investors, managers, etcetera. Therefore, the publication of Corporate Governance indicators generates user confidence as a control mechanism for the proper management and can guarantee that the company, its executives, employees, and third parties comply with the applicable legislation."

Given the results above, a transparency index of non-financial indicators has been calculated, referring to March 2019, for each of the companies and enables the ranking or position regarding compliance with web visibility and transparency to be obtained. It has been shown (Table 2) that there are 19 companies whose transparency index in non-financial indicators (INOFI) exceeds 77%. That is to say that, of the 27 indicators proposed for the study, they report on 21. In addition, at the next level of transparency with an index above 70% are 25 other companies that report on at least 19 indicators, so it can be concluded that about 68% of the companies analyzed are at INOFI transparency levels above 70%.

Specifically, of the 19 companies that achieve the highest levels of INOFI transparency, six are among the most important banks in Spain. This position perfectly aligns with the fact that they have been bailed out with public funds, and, therefore, they must strengthen their image. This confirms the importance for companies of the visibility of corporate information to reinforce their image and build trust among stakeholders.

The results on the analogy of the best companies by transparency and financial indicators indicate that of the 19 most transparent companies in INOFI, 9 are also the most profitable. Consequently, it can be affirmed that there is an association between transparency in INOFI and financial indicators on economic efficiency, which was the hypothesis in H3.

In order to confirm this result, statistical associations were sought through parametric correlations between the abovementioned variables, which confirmed hypotheses H3 and H4 of this research. In other words, there is a positive relation between the transparency of INOFI and the ROA ranking of the companies analyzed.

ROE and ROE Ranking are significantly correlated with INOFI and INOFI Ranking. This suggests that more profitable companies tend to be more transparent in INOFI and, therefore, better positioned in INOFI Ranking

These results have been tested through two predictive Linear Regression models, which confirm that in 64% of the cases, the financial variables, financial profitability and economic profitability have an explanatory capacity for transparency in non-financial information INOFI. In other words, 64% of the variation in the INOFI variable is explained by combining the two financial variables. This explanatory capacity is contrary to that suggested by the correlations between ROA, ROE, and INOFI, with less transparency in the most profitable companies.

Given these analytical results and the mapping of non-financial indicators, it appears that the directive and laws have had a limited impact on improving the quality of the websites of the 65 companies since the approval of the Directive in 2014 until today and, consequently, there is significant room for improvement of these companies to be more transparent, disclose their information, and interact with the various users.

In general, 65 companies comply with the transposition of the Directive at the level of non-financial information and have improved web transparency in social and Corporate Governance indicators. Nevertheless, the information on their websites should be more transparent and ordered, with more homogeneous guidelines regarding web transparency and non-financial indicators. This will increase and enhance reputational and investor information in this digital age. In addition, mandatory non-financial reporting will provide more order and transparency to the information system, resulting in greater stakeholder confidence.

Regarding potential non-financial web information to be expanded by the companies analyzed, the most important environmental information refers to reused waste and social information on senior management positions in German companies and net job creation in Spanish companies, in addition to information on the length of service for both indices; finally, at the corporate governance level, more information is needed on the CSR directors and the executive committee.

Making visible the risks derived from not having non-financial information and integrating financial and non-financial information on websites is a clear challenge in the current digital era for Public Interest Entities, groups, and companies. At the same time, the European Union, with its policies of sustainable development to avoid potential financial crises and ultimately to achieve better economies, is firmly committed to this integrated information and its transparency.

A limitation of the study stems from the rapid changes in the web information provided by these entities, and this study only provides the web transparency of non-financial details of these entities as of March 2019.

Future lines of research to assess the transparency of this information are as follows:

- Compare the information derived from the web transparency of the non-financial information of the companies analyzed with other European indices at later dates to demonstrate the evolution of this information of great business value.

- Assess the financial effect of reporting this non-financial information on other stock market indicators and look for differences in non-financial information by business sector.

These studies may soon be of interest since non-financial information, together with financial information, is included in reports in large companies with more than 500 employees considered as PIEs, and this information is potentially useful for other types of entities susceptible to analysis.

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Annex

Table A1
Non-financial indicators

Environmental indicators
Non-financial indicators
Power consumption
Water consumption
Polluting emissions
Waste management efficiency
Waste generation
Managed waste
Reused waste
Social indicators
Human Capital
Employees
Employee gender diversity
Senior management positions
Gender diversity in senior management
Job stability
Absenteeism
Employee turnover
Net job creation
Length of service
Employee training
Social capital
Regulations about clients
Payment to suppliers
Corporate Governance Indicators
Good Corporate Governance
Board Members
Independent Board Members
Corporate Social Responsibility (CSR) Advisors
Executive committee
Audit Committee
Nominating Committee
Board meetings
Total remuneration of the Board
Gender diversity on the Board

Source: AECA, 2018