



Sustainability reporting harmonisation? A utopian endeavour for European agri-food companies

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Abstract

Regulatory harmonisation stands as a central issue in the European Union (EU), playing a key role in achieving the single market. Accounting harmonisation, in particular, has been the subject of different regulatory frameworks, mainly directives. However, the literature suggests that the implementation of these directives within the EU does not consistently meet its harmonisation goals due to diverse legal, cultural, and business interpretations among the Member States. In the realm of social and environmental accounting, Directive 2014/95/EU (NFRD) compels specific companies to prepare and present Sustainability Reports (SRs), with the primary goal of enhancing the availability of sustainability information while also fostering greater consistency and comparability. Nevertheless, the flexibility afforded by this Directive may give rise to divergences among the national regulations of the EU Member States, as has been the case previously. Therefore, this study aims to analyse the success of the NFRD in harmonising sustainability disclosure by examining the quantity and homogeneity of such information disclosed in the SRs of 100 large agri-food companies in Italy, the Netherlands, Germany, and Spain. To do so, a content analysis and non-parametric tests were applied. The findings show a limited performance and high heterogeneity in disclosure across countries, suggesting that the NFRD has fallen short of harmonising national regulations on disclosing sustainability information.

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1. Introduction

The harmonisation of regulations in the European Union (EU) is a fundamental pillar which pursues full economic and political integration among the Member States (European Parliament, 2019a). This process of harmonisation becomes core for the creation and development of the single market that ensures all EU companies comply with uniform standards (European Parliament, 2019b). Indeed, in April 2011, the European Commission (2011) released a statement nothing that reaching a more integrated market involves the implementation of harmonised EU regulations rather than relying on 27 distinct national regulations within the business environment, and concretely within the Accounting Directives. The concern for harmonisation in accounting, in the sense that bring together accounting standards (*de jure* harmonisation) leading to a uniformity of accounting practices (*de facto* harmonisation) (Thorell & Whittington, 1994), seems to start with the Fourth Directive on the annual accounts of companies with limited liability (Council of the European Communities, 1978) and the Seventh Directive (Council of the European Communities, 1983) on consolidated accounts. However, the harmonisation through those Directives, due to the high number of options available for the Member States to customise these regulations into their national laws, does not accomplish the intended objectives such as comparability and equivalence of financial reports (Haller, 2002).

Later, and after adopting Regulation 1606/2002 (European Parliament and Council of the European Union, 2002) for listed companies, the EU once again opts for the legislative tool of Directive in order to increase the harmonisation in different accounting subjects – e.g., size criteria, general principles, valuation bases, etc. (European Commission, 2013). Directive 2013/34/EU (European Commission, 2013) regulates the annual financial statements and consolidated financial statements, and proposes for the first time to incorporate sustainability or non-financial information with financial information in the management or consolidated management report, but does not provide any other specifications. Some scholars state that this Directive does not harmonise financial information across the EU (Lang & Martin, 2016) and can even be mentioned as an anti-harmonisation Directive (Alexander, 2015).

In order to make mandatory the disclosure of sustainability information, different amendments to Directive 2013/34/EU in the form of another Directive are approved, concretely Directive 2014/95/EU known as the Non-Financial Reporting Directive (NFRD) (European Commission, 2014). The NFRD aims to enhance the consistency and comparability of social and environmental information (European Commission, 2014). For the first time, it mandates some large companies to prepare and present Non-Financial or Sustainability Reports (SRs) containing environmental, social, and governance (ESG) information (European Commission, 2014; Di Vaio et al., 2020). The Member States had two years to transpose the NFRD into their national legislation (European Commission, 2014), but previously and because of the lack of clear and concrete guidelines in the NFRD, the EU issues a non-binding guidelines (European Commission, 2017) to assist companies in preparing SRs, proposing the use of some international disclosure standards such as the Global Reporting Initiative (GRI), the Sustainability Accounting Standards Board (SASB), or the Integrated Reporting Framework (IR).

In this context where Directive flexibility can lead to divergences in applying and enforcing regulations across different EU Member States (Fink & Ruffing, 2017; Zbiral et al., 2023) and the EU aims to improve and standardise the sustainability disclosure information in all sectors and for all companies (European Commission, 2011, 2014), some questions arise: to what extent does the NFRD succeed in harmonising national regulations regarding the disclosure of sustainability information?, or more concretely: is the quantity of such information disclosed by SRs homogeneous across companies from different EU Member States? With the aim of answering those questions, the SRs of 100 large companies, which follow the GRI standards, from Italy, the Netherlands, Germany, and Spain are studied. In order to do so, a content analysis and non-parametric tests were applied to explore associations between the regulatory frameworks they operate at and companies' disclosure quantity, without aiming to draw causal inferences given the exploratory nature of this study. The study implements a sector-based approach to avoid sector influence on the quantity of disclosure (Raucci & Tarquinio, 2020; EFRAG, 2021), so, companies which belong to the agri-food sector are analysed. This sector becomes the core of sustainability, being prioritised by the European Green Deal (European Commission, 2019) and the "From Farm to Fork" strategy (European Commission, 2020a) which are aligned with the United Nations' Sustainable Development Goals (UN) (European Commission, 2020b). Indeed, there are only a few studies that analyse the effects of Directive 2014/95/EU (European Commission, 2014) on the disclosure quantity in the agri-food sector considering single countries (e.g., Anguiano-Santos & Salazar-Ordóñez, 2022; Makrenko et al., 2022).

The rest of this paper is organised as follows: Section 2 describes the NFRD and the corresponding transpositions into the national legal acts. Section 3 presents the sample data, and then the qualitative and quantitative methodological approach. Section 4 shows and analyses the results. Section 5 discusses the policy implications of the NFRD, and, finally, Section 6 provides the main conclusions.

2. Background: regulatory framework

Directive 2014/95/EU (NFRD) (European Commission, 2014) obliges the development of SRs to public-interest entities¹ with at least 500 employees in the financial year and conform as a group. Those must include sustainability information in their management reports or publish a SR on the corporate website within six months of the balance sheet date, containing information related to social, environmental, ethical and corporate governance aspects. Given the legal nature of EU directives, the Member States had a period of no longer than two years to transpose the NFRD into their national regulatory frameworks, such that it came into force in 2017 financial year (European Commission, 2014).

Italy was one of the first EU countries to transpose the NFRD into a national law through the Legislative Decree of 30 December 2016 (Decreto Legislativo, 2016). This legal act expands the mandate for those public-interest undertakings that meet the criteria settled in Directive 2013/34/EU (European Commission, 2013) for large companies² but in the financial year

¹ According to Directive 2013/34/EU, credit institutions, insurance undertakings, entities that securities traded on regulated markets and those designated by Member States because they are of significant public relevance (European Commission, 2013).

² According to Directive 2013/34/EU (European Commission, 2013), large companies are defined as those that meet at least two of the following conditions (for two consecutive years): assets exceeding €20 million, turnover exceeding €40 million, and/or more than 250 employees.

(Decreto Legislativo, 2016, art. 10). It allows for the use of different international standards for SRs or a mixed reporting method comprising one or more disclosure standards. In addition, the Italian transposition incorporates that the information must be verified by an independent assurance service provider (certified auditor), and penalties of between €20,000 and €100,000 can be applied in the event of the omission of relevant information, non-compliance or failure to submit the report within the timeframe. Finally, the information can be provided not only by a management report but also by a separate report published with the management report. The next transposition of the NFRD is taken into place in the Netherlands through the Decision of 14 March 2017 (Staatsblad, 2017). It further expands the NFRD scope by adding public entities that meet Directive 2013/34/EU criteria for large companies, while all large listed companies must prepare a statement about their diversity policy. In the same line than the Italian regulation, this Decision references the application of an international, EU-based or national reporting framework to produce the SRs. However, only a statutory auditor must check the sustainability information consistency with the financial statements, including also enforcement, although penalties are not specified. Finally, it stipulates that the SR must be integrated into the management report.

After those countries, Germany transposes the NFRD through the CSR Directive Implementation Act (CSR-RUG of April 2017) (Deutscher Bundestag, 2017). They adopt the NFRD in relation to the obliged companies but specifying that capital companies oriented to regulated capital markets with more than 500 employees must also fulfil the requirement for large companies. When producing the report, companies can rely on an international, EU-based or national reporting framework for guidance, as in the Netherlands. In addition, an audit report, regarding if the information is provided, is required from a statutory auditor, although when the sustainability information is presented in the management report, this document must be subjected to assurance. Penalties for breaching the law can be as much as €10 million, 5 % of the total annual turnover, or twice the profits gained or losses avoided (Deutscher Bundestag, 2017). The SR must be submitted with the management report or in a separate report within four months after the balance sheet date. The last country to transpose the NFRD is Spain, first through Royal Decree-Law 18/2017 (Gobierno de España, 2017), which subsequently became Law 11/2018 (Gobierno de España, 2018). The list of public-interest entities is extended to include payment institutions, pension funds with at least 10,000 participants and investment services, and collective investment institutions with at least 5000 clients or shareholders, as well as the scope of the law covers entities with a net turnover of over €2 billion and 4000 employees for two consecutive years (Gobierno de España, 2015, 2018). In addition, groups also must include in the consolidated management report the sustainability information when having more than 500 employees on average, or meet the requirements for large companies (at least two of the following conditions for two consecutive years): assets exceeding €20 million, turnover exceeding €40 million, and/or more than 250 employees³. Finally, capital companies with at least 500 employees on average, or that, during two consecutive financial years have assets exceeding €20 million or have a turnover exceeding €40 million⁴, are also obliged (Gobierno de España, 2018). The Law also states that an international, EU-based or national reporting

³ After three years, groups with more than 250 employees, or that meet (for two consecutive years): the criteria of having assets exceeding €20 million or turnover exceeding €40 million, are also included (Gobierno de España, 2018).

⁴ After three years, the threshold, for capital companies, reduces from 500 to 250 employees or that meet (for two consecutive years): the criteria of having assets exceeding €20 million or turnover exceeding €40 million (Gobierno de España, 2018).

framework must be applied. Moreover, as in Italy, the sustainability information must be verified by an independent assurance service provider, however, the Law allows the statutory auditor to make this verification, and no penalties are specified, although enforcement is required. The sustainability information can be presented in a management report, a separate report published with the management report, or a consolidated management report.

3. Methodology

3.1. Data gathering process

In adopting a sector-based approach, our study focused on the top five countries in the European Union (EU) in terms of agro-industrial production and exports, to ensure a robust cross-country comparison, as identified by the [European Commission \(2020a\)](#) and [Eurostat \(2022\)](#): France, Italy, the Netherlands, Germany, and Spain. In addition, given that the NFRD lacks specifications regarding the reporting standard, we opted for the Global Reporting Initiative (GRI). This choice stems from GRI's status as the most widely-used international standard, aligning SR content with the topics mandated by the NFRD ([GRI, 2017](#); [KPMG, 2020](#)). Therefore, our data collection encompassed three different sources. The primary source was the GRI website. Then, the corporate websites of the top 100 agri-food companies in each selected country were examined. These top 100 companies were obtained by the Bureau van Dijk database⁵, ranked by number of employees. Finally, when the SRs were not available on the website, the companies were contacted via email. Notably, France was excluded from the analysis due to an inadequate number of observations.

Finally, our sample comprised 100 large agri-food companies (20 Italian, 20 Dutch, 30 German, and 30 Spanish) that had prepared SRs following GRI guidelines between 2018 and 2021 years. In this sample, 53 companies were required to produce SRs as they were affected by the respective national transpositions of the NFRD, making SRs mandatory. Meanwhile, 43 companies did so voluntarily, as they were not affected. The breakdown by country is as follows: in Italy and the Netherlands, 6 companies reported SRs mandatorily, and 14 did so voluntarily; in Germany, 11 companies reported mandatorily, and 19 voluntarily; in Spain, all 30 companies reported SRs mandatorily.

3.2. Operationalisation of the content analysis

To assess the quantity and homogeneity of sustainability information disclosed by agri-food companies, we conducted a content analysis of the 100 SRs. Our approach was based on previous studies by [Matuszak and Róžańska \(2017\)](#), [Veltri et al. \(2020\)](#), [Carungu et al. \(2021\)](#), [Raucci and Tarquinio \(2020\)](#), [Korca and Costa \(2021\)](#), [Matuszak and Róžańska \(2021\)](#), [Esteban-Arrea and García-Torea \(2022\)](#). Concretely, to apply a thematic content analysis ([Jones & Shoemaker, 1994](#)), we established a classification scheme, a set of rules, and a data coding system ([Milne & Adler, 1999](#)). The classification scheme adhered to the structure outlined in the NFRD ([European Commission, 2014](#)), which mandates companies to disclose information in five blocks (*BDs*): Environment, Social, Employees, Human Rights, and Anticorruption and

⁵ Bureau van Dijk is a unique web-based tool developed by Moody's Analytics, specialised in private company data combined whose search engine allows to investigate companies.

Bribery. Aligned with the NFRD, the GRI Standards (GRI, 2017) further divide these blocks into 21 sub-blocks (*SBs*), which are in turn operationalised by 60 indicators (*Is*). Our measurement rules considered that the quantity of sustainability information disclosed could be gauged by the presence or absence of specific indicators (*Is*) of the GRI framework (Laskar & Gopal Maji, 2018). Therefore, we employed a multilevel aggregation process, the coding data with a value of 1 if the indicator (*I*) was present in the SR, and 0 otherwise. The index of disclosure for each *SB* (SBI_i) was computed as the sum of scores for each company's *Is* within each *SB*, divided by the number of *Is* in each *SB*. Similarly, the index of disclosure for each *BD* (BDI_i) was calculated as the sum of the scores for each company's SBI_i within each *BD*, divided by the number of *SBs* in each *BD* (Anguiano-Santos & Salazar-Ordóñez, 2022). Finally, the mean overall mean disclosure index (MDI_i) was calculated as the sum of the scores for the *BDS* divided by the number of blocks (*IB*), expressed as a percentage:

$$\text{Overall Mean Disclosure Index}_i = MDI_i = \frac{\sum_{i=1}^l BDI_i}{IB} \times 100 \quad (1)$$

All the estimations were performed both at the pooled sample and country subsample.

3.3. Statistical approach

To assess the differences in the quantity and homogeneity of sustainability information disclosed by agri-food companies across countries, non-parametric tests were applied due to the non-normal distribution of the data, as required for traditional analysis of variance. Specifically, the Mann-Whitney U test, akin to the Student's t-test, was used to compare pairs of disclosure distributions (Nachar, 2008; MacFarland et al., 2016). The analysis involved 10^6 permutations using the Monte Carlo technique, ensuring robust and precise results, especially valuable with small sample sizes and unequal group sizes (Marks, 2018). Additionally, effect sizes were calculated for a comprehensive understanding of the magnitude of differences between groups (Lötsch & Ullsch, 2020). To calculate the effect size for the U Mann-Whitney test we used the correlation coefficient r , the effect size was considered small when the value obtained was close to 0.1, when it was close to 0.3 it indicates a medium effect and close to 0.4 it indicates a large effect (Cohen, 1988). These approaches allowed us to assess our comparisons' statistical significance and quantify the practical magnitude of the observed differences between the groups (Fritz et al., 2012).

Subsequently, a Permutational Multivariate Analysis of Variance (PERMANOVA) was conducted to explore differences in the five sustainability information blocks across countries. PERMANOVA, based on distance measures between pairs of multivariate observations, employs permutations to assess the null hypothesis that the centroids and dispersion of groups are equivalent (Anderson, 2014). Country variable served as the explanatory source. Given the exploratory nature of this study and its focus on descriptive insights rather than establishing causal relationships, a significance level of 90 % was adopted. This approach allows for more flexibility in result interpretation without compromising statistical rigour (Anderson, 2001). Likewise, special emphasis was placed on the effect sizes since the samples did not treasure a high statistical power in this study (Rodríguez-Entrena et al., 2018).

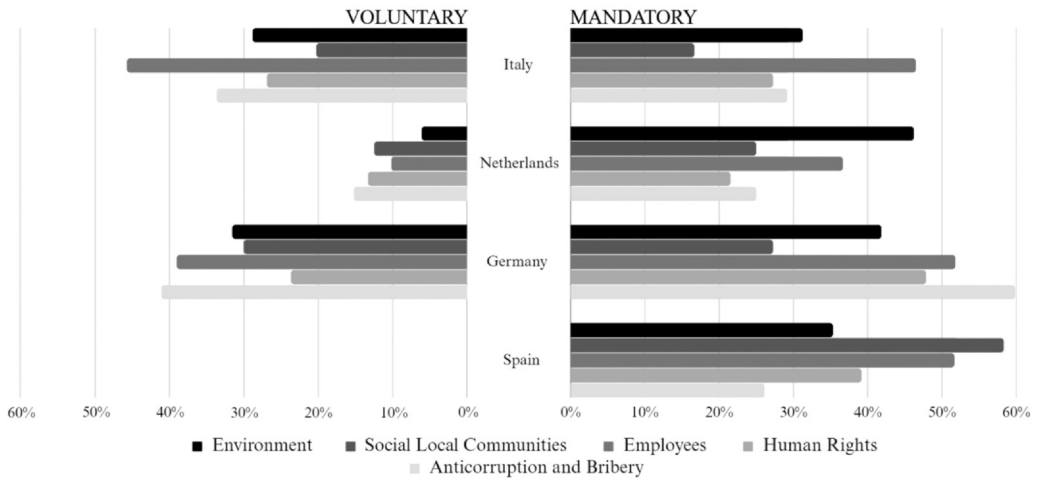


Fig. 1. Comparison of the quantity of information disclosure by country and status (voluntary vs mandatory).

4. Results

4.1. Content analysis

The findings from the content analysis revealed an insufficient performance regarding the sustainability disclosure quantity across all countries (see Fig. 1). In general, it seems that, in each country, companies reporting mandatorily exhibited a higher level of disclosure than voluntarily reporting companies, except in Italy. Among the companies required to report, the German companies stood out for having the highest quantity of information in their disclosures, followed closely by their Spanish counterparts. In terms of block-wise disclosure results, the Environment *BDs* did not reach 50 % in any group of companies, and the best results were observed in Dutch and German companies regarding the Italian and Spanish ones. In the Social Local Communities *BDs*, Spain clearly outperformed the rest of the countries, disclosing the double of information on average. The Employee *BD* was led by Spain, accounting for close to 60 %, followed by Germany and Italy, with the Netherlands standing out due to notably lower performance. In the Human Rights *BDs*, German companies led the ranking with a disclosed quantity close to 50 %, Spanish companies were close to 40 %, while Italian and Dutch companies closed the standings with less than 30 %. Finally, Germany displayed, by far, the best performance in the Anticorruption and Bribery *BD*.

On the other hand, voluntary disclosure was lower in all blocks in each country, with the exception of the Environment and Social Local Communities *BDs* in Italy. The least disclosure *BDs* in Italy and Germany were Social Local Communities and Human Rights, respectively. In the Netherlands, the lowest disclosed blocks were Anticorruption and Bribery, and Employees. Noteworthy discrepancies between mandatory and voluntary disclosure in terms of blocks were observed in each country. In particular, a notable discrepancy was found in the quantity of disclosure from Dutch companies when compared to those in Italy and Germany. This was particularly evident in the lower quantity of disclosure by the Dutch companies, which additionally presented a total discrepancy when compared to the mandatory disclosure in the

Netherlands. Thus, a consistent pattern was observed among the Dutch companies with a lower level of disclosure, on average, in the social component, consistently ranking below Spain, Germany and Italy. However, surprisingly, they led the ranking in the Environment *BD*. Therefore, the level of heterogeneity among countries was very pronounced. For example, Spain led in the *BDs* of Social Local Communities and Employees, Germany in Human Rights and Anticorruption and Bribery, and the Netherlands in the Environment one. This divergence could indicate that each country had different approaches to sustainability disclosure, reflecting heterogeneity in their priorities and values.

4.2. Analysis of intra-country heterogeneity

Subsequently, an approximation by country was made. Table 1 delineates the disclosure differences between mandatory and voluntary SRs within each country. The results indicate that in Italy, there was no significant difference in the quantity of sustainability information reported between mandatory and voluntary SRs, suggesting that Italian law may not have affected the development of SRs. Although the test was not significant, small and moderate effect sizes were found in the Environment, Social Local Communities and Human Rights *BDs* respectively, which could indicate a possible non-negligible impact of the NFRD. In the Netherlands, despite the differences found in the content analysis, the amount of mandatory versus voluntary disclosure was only significant in 2 out of the 5 *BDs* of information (Environment and Employees). However, moderate effect sizes were observed for the Social Local Communities and Anticorruption and Bribery *BDs*, suggesting that they might not have been significant due to a lack of statistical power. Thus, the NFRD could have affected the reporting level, as suggested by the content analysis. Finally, significant differences were observed in the Human Rights and Anticorruption and Bribery *BDs* in Germany. The results also showed a moderate effect size on the Employees *BD*, which could mean it was insignificant due to a lack of statistical power.

The analysis of heterogeneity within countries showed a general divergence in sustainability disclosure. The only *BD* that was not significant in any country was Social Local Communities, but it showed a moderate effect size in Italy and the Netherlands. Hence, it seems that NFRD adoption might have influenced disclosure within countries.

4.3. Analysis of cross-country heterogeneity

When comparing mandatory and voluntary disclosure across all countries, Table 2 shows significant differences in all the disclosure *BDs*. However, with small sample sizes, it is more important to analyse the effect sizes. It is worth mentioning that the effect sizes resulted in values in the range between 0.212 and 0.488 in all *BDs*, which is considered a medium-large effect. These results suggest that there was a significant amount of variation in the disclosed information, indicating considerable heterogeneity in SRs practices across the four examined countries.

Subsequently, a comparison was made across countries and mandatory companies (Table 3). The PERMANOVA analysis showed a statistically significant effect [$F(3, 49) = 3.132$; $p = 0.0226^*$]. Therefore, the quantity of sustainability information disclosed mandatorily by SRs across countries was different. Unsurprisingly, considering the content analysis results, the null hypothesis of no differences between countries was strongly rejected in the PERMANOVA approach (see Table 3). It is important to remember that the p -value is an empirical value, meaning that none of the 5000 permutation trials could replicate the observed difference. The

Table 1
Difference between mandatory and voluntary disclosure quantity by country (U of Mann-Whitney analysis).

	Environment	Social Local Communities	Employees	Human Rights	Anticorruption and Bribery
Italy	U de Mann-Whitney	32.000	41.500	35.000	40.000
	Z	-0.788	-0.041	-0.591	-0.179
	Median	0.290	0.250	0.421	0.182
	Sig. Monte Carlo ^a	0.314	0.493	0.292	0.496
Netherlands	Effect size	-0.178	-0.009	-0.136	-0.086
	U de Mann-Whitney	12.000	12.000	40.500	32.500
	Z	-2.479	-2.559	-0.140	-1.122
	Median	0.050	0.000	0.043	0.000
Germany	Sig. Monte Carlo ^b	0.006	0.005	0.458	0.155
	Effect size	-0.723	-0.743	-0.032	-0.259
	U de Mann-Whitney	104.000	76.500	60.000	56.000
	Z	-0.022	-1.206	-1.922	-2.120
	Median	0.326	0.000	0.327	0.250
	Sig. Monte Carlo ^c	0.500	0.118	0.028	0.017
	Effect size	-0.004	-0.220	-0.350	-0.387

Source: Own elaboration.

^a It is based on 10⁶ sample tables with a starting seed 334431365.

^b It is based on 10⁶ sample tables with a starting seed 221623949.

^c It is based on 10⁶ sample tables with a starting seed 1535910591.

Table 2

Difference between mandatory and voluntary disclosure quantity (U of Mann-Whitney test).

	Environment	Social Local Communities	Employees	Human Rights	Anticorruption and Bribery
U de Mann-Whitney	1038.500	873.000	772.500	848.500	1024.000
W de Wilcoxon	2166.500	2001.000	1900.500	1976.500	2152.000
Z	-1.430	-2.824	-3.269	-2.774	-1.587
Median	0.297	0.306	0.000	0.371	0.185
Sig. Monte Carlo ^b	0.077	0.002	< 0.001	0.003	0.057
Effect size	-0.212	-0.420	-0.488	-0.413	-0.236

Source: Own elaboration.

^b It is based on 10⁶ sample tables with a starting seed 2,000,000.**Table 3**

Difference between mandatory SRs across countries (PERMANOVA test).

	Df	Sum of Sqs	R2	F	Pr (> F)
Country	1	1.557	0.061	3.132	0.0226*
Residual	51	23.911	0.938		
Total	52	25.468	1.000		

Note (s): (*) Significance at 5 % level; (**) Significance at 1 % level; (***) Significance at 0.1 % level. 5000 permutations and the Euclidean distance method were employed

Source: Own elaboration.

proportion of variance explained (R2) was 0.061, suggesting that 6.1 % of the variability in the quantity of sustainability information disclosed could be attributed to these differences across countries.

Finally, after analysing the heterogeneity among countries, the results suggest that there was variability in both the quantity of disclosures and the homogenization of reports across countries, and consequently in the harmonisation. These findings imply that mandatory SRs disclosure was not homogeneous or uniform among the analysed countries but depended on various factors that impact both companies and nations. Furthermore, the variability may reflect distinct perceptions and sustainability priorities in each country.

5. Policy implication

The findings of this study provide information in two main directions. Firstly, they provide a scenario that can give policymakers an idea of what the major disclosure deficiencies in the agri-food sector might be if policies are not implemented to harmonise disclosed information. Secondly, the results can provide valuable insights into potential synergies among the different transpositions analysed in terms of disclosure. The low quantity of performance in disclosure and the heterogeneity found across countries suggest that the NFRD has fallen short of harmonising national regulations on disclosing sustainability information. The flexibility of the NFRD has turned into important differences in the national transpositions. One key aspect is that companies operating within the same sector and possessing similar characteristics may or may not be obligated to prepare SRs depending on the country. In this sense, Spain is the most restrictive country since it not only requires public entities and listed companies but also large

companies to prepare SRs, affecting a greater number of agri-food companies (Gobierno de España, 2018). On the other hand, only Italy and Germany specify sanctions, making it potentially more attractive for Spanish and Dutch companies not to portray a true picture of the company's sustainability actions. This could lead some countries to leverage the ambiguity of the standard as a soft measure to attract investments in a “greener and more sustainable” or legally favourable market. The primary consequence of this situation of lack of harmonisation could be the voluntary use of SRs as a tool to enhance brand image without being subjected to information audits and penalties for non-compliance. Dumay et al. (2018) and Pizzi et al. (2020) argue that the leniency of the NFRD could turn SRs into marketing tools. In fact, some studies describe this as “greenwashing” because certain companies use them to divert attention from problematic areas and improve their public image (Khan et al., 2021; Uyar et al., 2020).

In this context, the NFRD may have generated asymmetric demands for companies across countries, creating potential competitive advantages (disadvantages) for companies subject to more flexible (stricter) regulations, posing a threat to the EU's common market. Studies such as Contractor et al. (2020) find that multinational corporations take a comprehensive view of institutions in each country and consider all regulatory dimensions that could influence their business before making investments or establishing their headquarters. In addition, companies in countries with stricter regulations face higher management costs (Blind & Müller, 2019). Indeed, additional costs can be extended also to society. The initial objective of a regulation is to reduce transaction costs by clarifying the rules (Coates, 2015). However, minimising these costs and facilitating transactions can be achieved only by a regulation providing a clear and predictable framework (Rindfleisch, 2020). These costs are not only economic and can also influence social aspects, affecting public trust, perception of regulatory effectiveness, and ability of companies to operate ethically and sustainably (Aureli et al., 2020). In this regard, the NFRD seem to fail by creating gaps across companies and countries.

On the other hand, the low quantity of disclosure exhibited by agri-food companies in material aspects such as the Environment, Local Communities, Social, and Employees *BDs* (Bellantuono et al., 2018; SASB, 2023), raises doubts about the usefulness of the information. At this point, harmonising the amount of disclosure in SRs could serve both environmental and social (or socio-cultural) purposes (Bromley, 1996; Wilson, 2007). In addition, accurate information can improve the quality of employment, assess supply chain precariousness, and adherence to human rights (CNMV, 2021). Indeed, according to Hess (2019) greater and better disclosure could regulate working conditions, improving the most precarious conditions to meet sector averages. Finally, the results obtained question whether agri-food companies are contributing to achieving the objectives set by the EU in its internal and external policies, and its commitment to the 2030 Agenda (European Commission, 2023). In this sense, previous studies consider that sustainable development is possible when economic, distributive and environmental policies are harmonised, contributing to collective growth (Nugent & Sarma, 2002), and that legal equality is necessary to overcome significant disparities in competitiveness between member states (Lehmann, 2020).

6. Conclusions

This study analyses the quantity and homogeneity of information disclosed by agri-food companies across four EU Member States after the transpositions of Directive 2014/95/EU (NFRD) in order to delve deeper into its harmonisation effects. Considering the EU goal of improving and standardising the quantity of information disclosure (European Commission,

2011, 2014), the NFRD appears not to achieve a similar quantity of information disclosed by agri-food companies or homogeneity in such information. Our results suggest that the NFRD has led to impacts that were unintended and different from those expected. Therefore, it can be suggested that a Directive may not be the most suitable instrument to achieve harmonisation in sustainability information disclosure, especially if a wide margin for transposition by Member States is allowed. This flexibility in adoption seems to have contributed to the heterogeneity of disclosed information, with a greater margin for transposition leading to less harmonisation.

In this context, the proposition is to enact a new law regulating sustainability information via European regulation (binding legislative act) to mitigate disparate demands and requirements for companies based on their respective countries. This approach can ensure a consistent impact on companies with similar characteristics. Thus, the regulation should aim to measure, monitor, compare, enhance transparency, and substantiate companies' commitment to society and the environment. Consequently, it is recommended that the new regulation adopts a standardised approach and establishes a common set of standards. This initiative is anticipated to improve the comparability and reliability of SRs to achieve the sought-after harmonisation outlined in the NFRD. To guarantee the effective operation of the new legislation, each country should invest in monitoring corporate behaviour and implement deterrent sanctions to forestall greenwashing practices. In addition, the regulation should contribute to achieving the objectives set forth by the EU and the Agenda 2030. Furthermore, it should be designed to acknowledge and reward European taxpayers for their indirect investment in the regulation's formulation; falling short of the anticipated objectives during its developmental stages would render it a social cost without generating tangible societal benefits. Finally, it is important to consider the limitations of this research, which are directly related to the sample size. Although the choice of a specific sector (agri-food) and a standard (GRI) may constrain the sample size, they also enhance the quality of the analysed information. It is important to note that, while this research does not aim to establish causal relationships between the disclosures of SRs from different countries and the effectiveness of the NFRD, it does provide a relative overview of the behaviour of companies in the agri-food sector.

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