ENCOMPASSING NON-FINANCIAL REPORTING IN A COERCIVE FRAMEWORK FOR ENHANCING SOCIAL RESPONSIBILITY: ROMANIAN LISTED COMPANIES' CASE

Adriana Tiron-Tudor[1*], Cristina Silvia Nistor[2], Cristina Alexandrina Ştefănescu[3] and Gianluca Zanellato[4]
[1)2)3)4)] *Babeş-Bolyai University, Cluj-Napoca, Romania.*

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Abstract
This study investigates the disclosure levels of Romanians listed companies' pre and post the implementation of the European Directive 2014/95 (EUD) in order to explore the effects of the new regulation entered into force in January 2017, under the institutional lens. Moreover, the paper emphasises whether Romanian Energy (Oil & Gas and Utilities) listed companies are delineating, in their reports, issues regarding environmental, social, and governance (ESG) aspects. The empirical research performed throughout a pre/post effect analysis of the level of non-financial disclosure, followed by an exploration of its determinants using the Paired-samples t-test and regression analysis enable us to demonstrate a slight increasing in disclosure level, after the entry into force of the EUD. Moreover, Energy companies who are the most challenged by the bio-economy trend, demonstrated a considerable increasing in terms of disclosure as well as focused and awareness about ESG issues. Research findings lead to an effort increasing in order to satisfy EUD requirements, information are useful to practitioners and policy makers. According to authors best knowledge this is the first assessment of disclosure levels and its determinant pre and post directive adoption in the Romanian case, which can result useful to appreciate the effect of the EUD.

Keywords: non-financial disclosure, sustainability, bio-economy, social responsibility, disclosure index, European Directive 95/2014, Romania.

JEL Classification: Q57, Q01.

[*] Corresponding author, **Tiron-Tudor Adriana** – adriana.tiron@econ.ubbcluj.ro

Introduction

In the global context of resource scarcity provoked by climate change, deforestation, and other forms of environmental damage, the business' sustainable development needs to enhance a trustful cooperation with the communities based on environmental, social and governance (ESG) framework. Since ESG policy, sustainable development and stakeholder engagement became of increasing strategic importance, the interests in non-financial reporting, too. For this reason, the research focus on adopted solutions by companies concerning the publication of non-financial information in addition to the historic financial data, including ESG elements and forward-looking information over the short, medium and long term. The information also needs to be integrated so that business decisions are taken on a holistic basis, with all impacts considered. The European Commission, very attentive at the market's needs, have been actively promoting non-financial reporting, not only for the benefit of society, but also as a means to improve the competitiveness and innovation of businesses in the European Union (EU) (FEE, 2016).

In this frame, the paper comes to explore the non-financial information (hereafter NFI) disclosure prior and post period of the EU Directive 95/2014 (hereafter EUD), since it is a topic that raises important challenges in its implementation. Moreover, our study is focused on an Eastern European emerging economy without a long tradition in voluntary NFI disclosures and the first European country to ratify the Kyoto Protocol and a member of the International Labour Organization (ILO).

The Romanian listed companies at the Bucharest Stock Exchange (BSE), included in the BET-Plus Index, compose the analysed sample for the years 2016-2017, a period that corresponds with the moment pre/post transposition of the EUD in the national legislation. In this context, the present contribution has been conducted under the institutional theoretical framework as a coercive isomorphism can be expected, due to the mandatory character of the EUD.

The key objective of this study is to identify the impact of the EUD enactment on the level of transparency, and then there is a specific interest on how energy companies (oil & gas and utility sector), those companies carrying out activities affected by the moving to a bio-economy, have increased their reporting of ESG information in response to regulatory demands and pressure for voluntary disclosures. Thus, it aims to assess whether the level of non-financial disclosures has changed after the EUD's implementation and to identify the main factors of influence. This assessment is useful to understand companies' reaction to regulatory change, particularly in those sectors with impact on bio-economy. Thus, it allowed us to comment upon, current status and future improvements of the national initiatives, basing on the potential enablers and barriers that might have influenced the legislative enactment.

The originality of the study is provided both theoretically and empirically. Thus, we enriched the literature by approaching the non-financial perspective of corporate reporting which is a fresh path (Dumitru et al., 2017), focusing on an emerging country where evidence on this topic is still scarce. Thus, we added value in this field by assessing the level of disclosures on NFI, thus chasing the effects of the EUD enactment and its potential factors of influents. The empirical viewpoint contains a quantitative research methodology that combines a descriptive approach aimed to compare the disclosure degree between industries and across time, thus focusing on the impact of the EUD enactment on the level of transparency, with a statistical approach designed to investigate its determinants through regression analysis. In addition, to increase the reliability of the empirical analysis, we performed appropriate significance and robustness tests, all of these coming to add value to the research literature.

The main findings of our research reveal that Romanian companies' disclosure was on average, higher than the Italian (Venturelli et al., 2017) or the Polish ones (Matuszak and Rozanska, 2017), the strong increase being encountered in case of companies belonging to an environmental sensitive industry (e.g. *Oil & gas*), which reached a level higher even than the average of the European extractive petroleum companies (Carini, et. al, 2018). Additionally, the main factors influencing the degree of disclosure proved to be the size of the company, its performance and the industry sector in which it operates.

The study addresses a broad range of users including the regulators, industry or academia members. All third parties become very interested in companies ESG criteria with regard to the firm's ethical impact and sustainable practices. Moreover, knowing that even the bio-economy represent the future, it cannot replace the fossil-based economy on short term (McCormick, 2011) and energy industry that have a strategic role in each state economy.

The remainder of the paper proceeds as follows. The introduction reveals the whole image of the context, need, objective, scope, methodology and actuality of the study performed in a tight correlation with the theoretical background for non-financial information reporting, focusing on the importance of the new EUD at both international and national level. The research, framed in the institutional theory, develops predictions based on theoretical aspects argument and interpreted by empirical approaches (research methodology, results and conclusions) contribute by an original approach to the reveal of the positive impact of EUD adoption over the transparency level in the case of Romanian listed companies.

1. Literature review

The presentation of traditional and purely financial indicators that ignores non-financial issues is no longer sufficient for investors and appears to be less relevant in a new century in which social and environmental aspects are essential (Atkins et al., 2015). Thus, different forms and reporting frameworks have developed over time (De Villiers and Sharma, 2017). The non-financial voluntary reporting birth and propagation are related to the development of democracy and economy. In the 1980s, the environmental issues became prevalent, due to the high level of risks associated with the impact of economic activities on nature's degradation (Dura et al., 2019). Then the sustainability and social responsibility had spread in the 1990s when the holistic approach emerged, and the triple-bottom-line reporting acknowledged the interplay between economic, social and environmental facets of business (Ali et al., 2017; Idowu et al., 2018). Until the last part of the 20th century, reporting of non-financial information (social and environmental information) was made through annual corporate reports (De Villiersm et al., 2014). Subsequently, the company's social and environmental disclosures were made more and more in individual reports.

In the European context, long before the commencement of the EUD, corporate sustainability reporting has always been considered a voluntary act. The most widely used standard is the GRI (Global Reporting Initiative). It proved very useful to organise environmental, social and governance indicators, to produce comparable and complete sustainable reports (Lueg et al., 2016) used by a considerable number of the reporting companies worldwide. Other frameworks used include AccountAbility's AA1000 Standards, ISO 26000 and the policy initiative recommended by the United Nations Global Compact. CSR reporting is considered "The process of providing information designed to discharge social accountability" (GRI, 2011).

Individual, social and environmental reports have become in time increasingly complex and long size because information on a wider range of non-financial issues has been presented to respond to the alleged information needs of several stakeholders (De Villiers et al., 2014). As a result, the overload of information makes it difficult for the readers to appreciate the links between all the information presented in the report (Dumay et al., 2016) and emerge the idea of integrating all of these in a single report, and the resulting practices became known as integrated reporting.

Mandatory NFI reporting is about to gain momentum in the EU, especially after the introduction of the EUD. It lays down rules for companies with more than 500 employees to disclose specific information on social and environmental impacts of their operations. This Directive supports corporate reporting as a means towards better integration of sustainability within business models. The EUD, which has been ongoing implemented into national laws by its member states, becomes active from 2017. Before and moreover after the EUD issuance, conceptual and empirical research on the emerging NFI reporting practices has received growing attention from researchers, practitioners, and policymakers across various disciplines.

Thus, most researchers conducted an ex-ante analysis of the non-financial reporting and its determinants (Carini et al., 2018; Szadziewska et al., 2018; Dumitru et al., 2017; Galant and Cerne, 2017), while there are few ex-post evidences (Sierra-Garcia et al., 2018; Venturelli et al., 2017; Matuszak and Rozanska, 2017). For example, the quality of CSR disclosure in Polish-listed Companies in the light of EUD requirements (Matuszak and Rozanska, 2017), the compliance to the EU Guidelines 2017/C215/01 with the IIRF and the GRI 4 guidelines on the European companies (Manes-Rossi et al., 2018), the level of non-financial and diversity disclosure and the transposition of the EUD into Italian law (Venturelli et al., 2017) or the level of completeness of NFI and the expected impact of the EUD in oil and gas sector (Carini et al., 2018) and the clarity of reports published by organizations (containing elements related to bioeconomy) in Europe (Avram et al., 2018).

In Romania, the concept of CSR emerged only after the 1990s when the transition to a decentralized economy started. After 1990, the market economy starts, the strongly under-capitalised Romanian citizens and economic actors seek to maximise their immediate incomes and tend to neglect the long-term perspectives, but, a learning process concerning CSR was initiated and fostered by various market' actors (Korka, 2005). Moreover, the accession as an EU member state in 2007 change a lot the Romanian society, business environment and corporate governance culture. Reforms influenced the involvement of companies in CSR and sustainability activities, which consisted largely in improvement or replacement of production technologies more "friendly" environment and social measures that targeted the employees or the company (Zapciu, 2015).

After Romania's integration into the EU, significant improvements were made to the normative acts concerning the protection of the environment, the health and safety of employees, transparency and anti-corruption. The implementation of responsible practices has become stronger and was driven mainly by the involvement of multinational companies that have transferred their practices and organisational culture from the headquarters to a local level (Istrate et al, 2017). Besides the transfer of knowledge and best practices, a different kind of companies and "responsible industries" was developed after the European integration – the companies whose business objective itself is "to be responsible". These companies are engaging in activities, which by their nature bring benefits to the environment and communities, and their responsibility comes as an indirect result of the goods and services they produce/provide.

Since 2012, for all Romanian companies there is a legal requirement to explain: non-financial KPIs, employee-related and environmental information (Order 1286/2012) and moreover for listed companies, the analysis of the company's activities including information related to employees, environmental impact, risk management and the associated policies and objectives, as well as prospective information. (CNVM Reg. no. 1/2006).

The EUD is transposed in Romanian legislation by Order No. 1938/2016. The Order, is according with the EUD concerning the reporting framework, disclosure format, safe harbour principle, diversity reporting required, and adapted the definition of entities, report topics and content, auditor's involvement, and noncompliance penalties. The report must include the follows features: environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters.

According to the EUD, the report shall contain a description of the undertaking's business model, company policies relating to nonfinancial matters, and the outcomes of those policies, principal risks related to nonfinancial matters and business activities, any non-financial KPIs that are used. This information shall be presented in the administrator report, or a separate report published alongside it or within six months of the balance sheet date, made available on the undertaking's website and referenced in the directors' report.

Just after 2007, Romanian companies' narrative reports become a subject of study and one of this study (Bogdan et al., 2007) reveal the fact that after the privatisation, the management started to account for issues related to its social responsibility. CSR reporting in Romania is studied using the listed companies case (Jindrichovska and Purcarea, 2011; Dumitru et al., 2011; Dura et al. 2019), through the role of the stakeholders in its institutionalization (Gușe et al., 2016), or in relation with the EUD (Dumitru et al., 2017) or specific issues such as environmental information disclosure (Istrate et al., 2017) CSR reporting impact on companies' employees (Dura et al., 2019), and financial performance (Hațeganu et al., 2017). Analysing the evolution of NFI reporting studies in Romania there is a positive trend, starting from inconsistent information in 2006-2008, to a more consistent in a short period (Jindrichovska and Purcarea, 2011).

Moreover, in recent years, increasing demands on food security, energy conservation, water and raw materials have led to a growing need for switching to the use of renewable energy in the economy (wind energy, solar (thermal, photovoltaic and concentrated), hydroelectric power, tern energy, geothermal energy, biomass and the renewable part of waste) (Jenkins, 2008). The use of renewable energy has many potential benefits, including the reduction of greenhouse gas emissions, diversification of energy sources and reduced dependence on fossil fuels markets (especially oil and gas). In this respect, bio-economy (which includes the production, transformation and use of bio-materials and products) becomes the central theme of most economic and macro-economic strategies and programs, especially in industries traditionally based on (Eickhout, 2012) Due to these aspects, bioeconomy offers a sustainable alternative for the economy in general and especially for the energy and fuel industry (Jenkins, 2008).

2. Research methodology

Voluntary disclosure of NFI can be seen as a strategy of legitimating companies' behavior as "some organizations are considerably more visible, and some organizations depend relatively more heavily on social and political support" (Dowling and Pfeffer, 1975; p. 133). According to Deegan (2009), voluntary disclosure is related to institutional practices. Accordingly, EUD introduction fundamentally changed the context in which, from now on, organizations will disclose NFI. As for organizations with more than 500 employees becomes mandatory to disclose NFI, draws the non-financial disclosure into a coercive context. Given the previous assertions, our contribution is instituted on the theoretical framework provided by institutional theory, as "it operates to produce common understanding about what is appropriate, fundamentally, meaningful behavior" (Zucker, 1983; p. 5). For all of this arguments, institutional theory can be seen as "the social process by which individuals come to accept a shared definition of social reality – a conception whose validity is seen as independent of the actor's own views or actions but is taken for granted as defining the "way things are" and/or the "way thing are to be done" (Scott, 1987; p. 496). In addition, Aldrich suggests that "the major factors that organizations must take into considerations are other organizations" (1979, p. 265). Moreover, the adopted theory enlightens management behavior similarities according to three means: mimetic, coercive and normative isomorphism (DiMaggio and Powell, 1983).

In this vein, our study encounters two of the three mentioned processes as in the case of organizations with more than 500 employees' organizations are confronting with a coercive isomorphism which originates from political influence and companies with less employees are imitating bigger similar organizations perceived, by them, as more legitimate or successful (DiMaggio & Powell, 1983). In line with the existent literature, institutional theory has been employed in order to demonstrate how organizations from the same country are conforming corporate behavior practices in their reporting system, outlining a low similarity in term of corporate practices (Guse et al., 2016). Further on, Dumitru et al. (2017) investigated, under the institutional theoretical framework, the EU Directive adoption by Poland and Romanian companies finding as the most influential institutional factor is regulation (Dumitru et al., 2017).

Accordingly, organizations directly affected by the EUD should increase their disclosure levels because of coercive isomorphism, while organizations with less than 500 employees should increase their disclosure levels because of mimetic isomorphism.

Grounded on the above assumptions we framed the subsequent research questions:

- *RQ1: What is the impact of the EUD enactment on the level of transparency?*
- *RQ2: How coercive, mimetic and normative pressures influence the level of non-financial disclosure?*

For answering these research questions, we performed a *quantitative research* on a sample collected by gathering the annual reports issued by the 40 organisations included in the BET Plus, from the BSE, for the years 2016-2017. The sampled companies were grouped in industry sectors according to Melloni et al. (2017), thus resulting six main categories, as follows: *Consumer Good (8), Consumer Services (4), Financial (8), Industrial (12), Oil & Gas (5) and Utilities (3).*

In the first stage, for running *the pre/post effect enquiry* aimed to measure the impact of the EUD enactment on the level of transparency (RQ1), we proceeded to develop a tool for assessing it. In this respect, we performed a manual *content analysis* (Krippendorff, 2013) in order to investigate the level of the NFI disclosure provided by Romanian companies in their annual reports. This type of analysis was often used in prior studies focused on similar topics as environmental and social reporting (Giannarakis, 2014; Ali et al., 2017). In this vein, we conducted the analysis according to the checklist proposed by Manes et al. (2018) based on the requirements included in the European Union Guidelines 2017/C215/01 (hereafter EUG). Therefore, we used a dichotomous approach to quantify the information by attributing scores of "1" for the presence of the required element and "0" in case of absence (Venturelli et al., 2017; Gușe et al., 2016; Galant and Cerne, 2017). Consequently, we developed the non-financial information *disclosure index* (NFI) by dividing the number of elements disclosed in the annual report, required by the EUG, to the total number of elements. We used an un-weighted disclosure index to quantify the level of compliance of the reports considering the aim of our research, namely to assess the impact of the EUD enactment on the level of transparency by investigating only whether the required elements were included in the reports, without focusing on their degree of presentation (Guthrie and Parker, 2010). In order to ensure the reliability and validity of the investigation, the annual reports have been analysed separately by two authors. Then, the results have been compared and discussed to minimize any discrepancies and, finally appointed, thus increasing their trustworthiness.

In the second stage, for performing *the regression analysis* aimed to identify possible factors influencing transparency enacted through the EUD (RQ2), we selected the potential determinants of the NFI disclosure (dependent variable) according to prior studies conducted on a similar topic. Among the most analyzed factors influencing there are the company size (measured by the number of employees, total assets or market capitalization), profitability (measured by ROA/ROE), financial leverage, Tobin's Q, business sector, assurance, type of reporting (Szadziewska et al., 2018; Sierra-Garcia et al., 2018; Duran and Rodrigo, 2018; Venturelli et al., 2017; Galant and Cerne, 2017). A summary of the independent variables considered in this research comprising their definition, proxies and reference authors is presented in table no. 1.

Table no. 1: Variables description

Variable definition / proxy		**Prior studies**
Size		
ASSET	The natural logarithm of the total assets value measured at the end of the fiscal year	Szadziewska et al. (2018); Sierra-Garcia et al. (2018); Duran and Rodrigo (2018); Galant and Cerne (2017)
EMPL	The natural logarithm of the total number of employees at the end of the fiscal year	Venturelli et al. (2017); Galant and Cerne (2017)
Industry		
SENS	Industry's environmental sensitivity: "0" (Consumer goods and services); "1" (Industry, Oil &gas); "2" (Financial)	Venturelli et al. (2017); Sierra-Garcia et al. (2018)

Variable definition / proxy		Prior studies
Performance		
ROA	Return on assets – The ratio of the annual net income to the total assets at the year's end	Szadziewska et al. (2018); Duran and Rodrigo (2018); Galant and Cerne (2017)
ROE	Return on equity – The ratio of the annual net income to the stockholders' equity at the end of the fiscal	Szadziewska et al. (2018); Duran and Rodrigo (2018)
LEV	Financial leverage ratio – The ratio of the total debt divided by the total assets at the end of the fiscal year	Szadziewska et al. (2018); Duran and Rodrigo (2018); Galant and Cerne (2017)
Reporting type		
MAND	The mandatory character of reporting due to the employees' number criteria	Venturelli et al. (2017)

Source: Authors' projection

3. Results and discussion

For achieving our goal – to analyse the companies' openness for the publication of NFI on social responsibility and sustainability, we performed a two-steps investigation throughout a pre/post effect analysis of the level of non-financial disclosure, followed by an exploration of its determinants. Firstly, for assessing *the impact of the EUD enactment on the level of transparency (RQ1)*, the descriptive results reveal a noticeable increase in terms of disclosure in the year 2017, the first reporting period of the mandatory non-financial disclosure (see Table no. 2). Moreover, the average level of disclosure of our sample is higher, compared to the score of the Italian companies (49%) (Venturelli et al., 2017) or the Polish ones (36%) (Matuszak and Rozanska, 2017).

Table no. 2: Disclosure levels per element

Year	Tot. NFI	EUG										
		1	2	3	4	5	6	7	8	9	10	11
2016	0.51	0.78	0.39	0.11	0.86	0.22	0.75	0.83	0.25	0.31	0.06	1.00
2017	0.69	1.00	0.65	0.13	1.00	0.46	0.95	1.00	0.43	0.55	0.40	1.00

EUG: (1)Business model; (2)Policies and due diligence; (3)Outcome; (4)Principal risks and their management; (5)Key performance indicators; (6)Environmental matters; (7)Social & employee matters; (8)Respect for human rights; (9)Anti-corruption & bribery matters;(10) Reporting frameworks;(11) Board diversity disclosure

Source: Calculations made by authors using SPSS software

In order to analyse how reporting behaviour changed, as well as to outline further steps required by the Romanian listed companies to respect the EUD, it is relevant to consider the scores obtained by each element. Thus, for the year 2016, the results reveal companies' predilection for disclosing the: *Board Diversity Disclosure, Principal Risks and Their Management, Social and Employee Matters and Business Model* (requested by CNVM Reg. no 1/2006) whilst, the lowest results have been obtained in *Reporting Frameworks, Outcome, Key Performance Indicators and Respect for Human Right.* In this sense, we found different reporting behaviours, revealing dissimilarities with other studies focused on the European level, as well as inconsistencies with other countries' behaviour concerning the non-financial reporting required by the EUD. Romanian companies disclosed in 2016 more information regarding *Board Diversity Disclosure and Business Model* in comparison with the European organizations, but disclosed on average less information for the rest of the analysed categories (Manes-Rossi et al., 2018). Moreover, Romanian companies reached higher disclosure level for *Principal Risks and Their Management and Board Diversity Disclosure* than the Italian ones, but lower results for the *Key Performance Indicators and Policies and Due Diligence* (Venturelli et al., 2017). Furthermore, it is important to note that companies placed little emphasis on reporting about *Outcome, Key Performance Indicators and Respects for Human Rights*, which remained very low, even after the EUD enactment. Consequently, the entrance into force of the EUD, several categories has been entirely acknowledged by the analysed organizations. *Business Model*, *Principal Risk & Their Management*, *Social & Employee Matters* and *Board Diversity Disclosure* are the elements that have been disclosed by the entire sample. Whilst, *Key performance indicators*, *Anti-corruption & bribery matters* and *Reporting frameworks*. The increase lead by the directive in 2017 did not affect all the elements, as organizations do not demonstrate a sufficient level of disclosure even after the entrance into force of the EUD for what concern *Outcome* and *Human Rights*.

In order to add more value to the results reached we deepen our research by statistically testing the differences encountered in the disclosure level after the EUD. Since normal data is an underlying assumption in parametric testing, we needed at first to ascertain whether our sampled data are normally distributed or not for applying the most appropriate test. In this respect, we run the *Shapiro-Wilk Test*, which is more appropriate for small sample sizes (< 50 samples), the results reached (0.292 for NFI pre and 0.072 for NFI_post) being both acceptable, since Sig. values are greater than 0.05 (Field, 2017).

Then, we carried out the *Paired-samples t-test* aiming to determine whether there is statistical evidence that the mean difference between paired observations (pre and post in EUD enactment in our case) on a particular outcome, namely the disclosure index, is significantly different from zero. Our results (see Table no. 3) reveal a significant mean increase of 0.235 in the level of disclosure between the pre-test and post-test period, which is statistically significant (p-value < .001).

Table no. 3: Paired Samples t-Test results

Pair 1	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Dev	Std. Error Mean	95% Conf. Interval of the Difference				
				Lower	Upper			
NFI_pre-NFI_post	-0.23575	0.21097	0.03336	-0.30322	-0.16828	-7.068	39	0.000

Source: calculations made by authors using SPSS software

Finally, we measured the effect size of the EUD enactment over the level of disclosure by calculating the Cohen's d, using the following formula:

$$\text{Cohen's } d = (M_2 - M_1) / SD_{\text{pooled}} \quad \text{and} \quad SD_{\text{pooled}} = \sqrt{((SD_1^2 + SD_2^2)/2)} \tag{1}$$

where: M_1 and SD_1 are the mean and standard deviation of the de disclosure index for the pre-test period, while for M_2 and SD_2 correspond to the post-test period (Field, 2017).

The result reached reveals a small effect of the new regulation on the overall transparency level (Cohen's d = 1,106). Afterwards, we deepen our research focusing on analysing the impact of the EUD enactment on the level of transparency*;* by considering the environmental sensitivity of the industry to which companies belong, as well as the mandatory/voluntary type of reporting due to the number of employees (see Table no. 4).

Table no. 4: Disclosure levels of sampled companies according to their industry's environmental sensitivity and mandatory status

Industry	Non-Mandatory starting with 2017				Mandatory starting with 2017			
	2016		2017		2016		2017	
	No.comp	*NFI*	*No.comp*	*NFI*	*No.comp*	*NFI*	*No.comp*	*NFI*
Consumer Good	3	0.50	1	0.55	5	0.49	7	0.68
Consumer Services	1	0.64	1	0.64	3	0.36	3	0.55
Financial	4	0.24	4	0.50	4	0.45	4	0.79
Industrial	7	0.44	7	0.61	5	0.62	5	0.69
Oil & Gas					5	0.62	5	0.89
Utilities					3	0.70	3	0.88
Total / Average	***15***	***0.42***	***13***	***0.57***	***25***	***0.55***	***27***	***0.74***

Source: Calculations made by authors using SPSS software

A general increasing appears after the entrance into force of the EUD, particularly, in case of *Financial and Consumer Good*, where companies that previously had very low levels of disclosure, obtained higher results. In particular, the number of companies belonging to the *Consumer Good* sector between the two years increased for the mandatory section, as the number of their employees exceeded the minimum number of employees required by the EUD.

As it can be seen, the disclosure levels per industry demonstrate a particular inclination toward the EUD by organizations belonging especially to Energy (*Oil & Gas and Utilities*), where they reached a disclosure level higher than the averege of the European similar domains (Carini, et. al, 2018) as it is presented in Table 5.

Table no. 5: Energy sector disclosure levels per element

Year		NFI	EUG										
			1	2	3	4	5	6	7	8	9	10	11
2016	O&G	0.62	**1.00**	0.60	0.20	0.80	0.20	0.80	0.80	0.40	0.80	0.20	**1.00**
	U	0.70	**1.00**	0.67	0	**1.00**	0.67	**1.00**	**1.00**	0.33	0.67	0.33	**1.00**
	WA	***0.65***	***1***	***0.63***	***0.13***	***0.88***	***0.38***	***0.88***	***0.88***	***0.37***	***0.75***	***0.25***	***1.00***
2017	O&G	0.89	**1.00**	0.80	0.40	**1.00**	**1.00**	**1.00**	**1.00**	0.60	**1.00**	**1.00**	**1.00**
	U	0.88	**1.00**	**1.00**	0.33	**1.00**	0.67	**1.00**	**1.00**	0.67	**1.00**	**1.00**	**1.00**
	WA	***0.89***	***1***	***0.88***	***0.37***	***1.00***	***0.88***	***1.00***	***1.00***	***0.63***	***1.00***	***1.00***	***1.00***

EUG: (1)Business model; (2)Policies and due diligence; (3)Outcome; (4)Principal risks and their management; (5)Key performance indicators; (6)Environmental matters; (7)Social & employee matters; (8)Respect for human rights; (9)Anti-corruption & bribery matters;(10) Reporting frameworks;(11) Board diversity disclosure

Source: Calculations made by authors using SPSS software

If in 2016 just two elements (*Business model and Board diversity disclosure*) were disclosed by the all sample of Energy sectors, in 2017 are added other five (*Principal risks and their management and Environmental matters, Social and employee maters, Anti-corruption & bribery matters and Reporting frameworks*). The full sample of utility sector disclose in 2016 information for five elements and the number increase at eight in 2017. If in 2016 Oil and gas sector sample count only for two, in 2017 they are eight. GRI is mentioned in the sample as reporting framework.

The shift brought by the EUD, underline for the companies with more than 500 employees to include NFI in their management report. This can be considered as the primary motivation for the outlined change demonstrated by the sampled companies. In this sense, our investigation includes also organizations with less than 500 employees, which are not foreseen by the EUD. Surprisingly, these companies seem to respond as well to the entering into force of the new regulation by disclosing more information related to the EUG requirements. Consequently, our results outline the effect of the EUD on the foreseen companies that moved from a medium level of disclosure to a good one, the strong increase being encountered in case of organizations, having more than 500 employees and belonging to the following sectors: *Oil & Gas and Utilities* followed by *Financial.* Table no. 4 outlines at best the institutional isomorphism in both cases, mimetic and coercive. Organizations, with more than 500 employees, increased their compliance level from an average degree to a high level of compliance, because of the mandatory character of the EUD for such organization. While, smaller organizations developed as well their disclosure level, in slighter quantity but tend to increase their disclosure level because of the mimetic isomorphism process of institutionalisation.

The study is deepened by statistically testing the main effects of industry's environmental sensitivity and mandatory status due to the number of employees, as well as the interaction effect between them on the increasing level of disclosure after the EUD enactment.

In this respect, we applied the *General Linear model (GLM)*, which is the most appropriate for analysing the variance for one dependent variable (NFI_Dif in our case expressing the changes encountered into the disclosure level) by one or more factors (industry's sensitivity and mandatory status), a *Factorial ANOVA* analysis being performed.

Since the analysis of variance (ANOVA) provides evidence about the differences among group means in a sample, we firstly assess the equality of variances by applying the *Levene's test*. According to the resulting p-value (.489) we rejected the test's null hypothesis, thus confirming that there is a significant difference in the increasing disclosure level across groups. Moreover, the *Two-way ANOVA* results (see Table no. 6) reveal that there were statistically significant differences between the industries sensitivity ($p<.005$), but there was no statistically significant difference in mean increasing disclosures neither between companies with more and less than 500 employees ($p=.175$) nor in the interaction effect between them ($p=.211$).

Table no. 6: Two-way ANOVA results – Tests of Between-Subjects Effects

Dependent Variable: NFI_Dif

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power[b]
Corr. Model	0.377[a]	5	0.075	1.884	0.123	0.217	9.418	0.567
Intercept	1.537	1	1.537	38.452	0.000	0.531	38.452	1.000
EMPL	0.077	1	0.077	1.916	0.175	0.053	1.916	0.270
SENS	0.286	2	0.143	3.581	0.039[*)]	0.174	7.162	0.625
EMPL*SENS	0.130	2	0.065	1.627	0.211	0.087	3.254	0.320
Error	1.359	34	0.040					
Total	3.959	40						
Corr. Total	1.736	39						

a. R Squared = 0.217 (Adjusted R Squared = 0.102)
b. Computed using alpha = 0.05
[*)] significant for p-value<0.05

Source: Calculations made by authors using SPSS software

For achieving our second goal – to identify the main factors influencing the non-financial disclosure (RQ2), particularly the industry's environmental sensitivity, as industries challenged by the bio-economy trend, we performed a *statistical analysis* based on the NFI disclosure index developed and its determinants.

Firstly, we stepped into the *correlation analysis* using Pearson coefficient for providing information upon the course and significance of influences between the NFI disclosure index (dependent variable) and its prospective determinants (independent variables). By considering the values of Pearson's coefficient, usually used for quantifying the strength of a linear dependence between two variables, we can state that the variables tested are mostly connected to the NFI disclosure index, thus being possible factors influencing companies' decisions to disclose NFI. Thus, companies' size, measured either by the total assets or the number of employees proved to have the strongest positive influence of all explanatory factors tested, with a high probability of significance of 99% (Sig.<0.01) and the highest intensity (0.535, respectively 0.519). Associations with the lowest intensity were found in case of companies' performance (0.352 for ROA and 0.378 or ROE) and the mandatory/voluntary type of reporting (0.383).

Secondly, we deepen our research aiming to provide answers regarding the impact of industry's environmental sensitivity in preparing and improving the specific reporting as a basis for significant social enhancements supported by the bio-economy. In this respect, we developed a *regression model* encompassing the significant determinants of the level of NFI disclosed by the sampled companies by using multiple regressions as the method of analysis and the Ordinary Least Squares (OLS) as the method of estimation.

Therefore, at first, we used the *linear regression* by applying the *enter method*, thus identifying those independent factors that proved to explain better the influences over the level of NFI disclosure. Unfortunately, the results reached could not let us to develop a robust and reliable model encompassing all explanatory variables, due to the multicollinearity issues (e.g. between ROA and ROE; between total assets and number of employees) or the lack of significance (e.g. reporting type). Consequently, we applied the *stepwise method* since it allowed us to select just those independent variables that were statistically significant, as it can be seen in table no. 7.

Table no. 7: Regression analysis using stepwise method for NFI disclosure

Model	Unstandard Coeff.		StandardCoeff.		Sig.	Collinearity	
	B	Std. Err	Beta	t		Tolerance	VIF
(Constant)	-1.223	0.318		-3.873	0.000		
ASSET	0.089	0.016	0.729	5.558	0.000 *)	0.856	1.169
LEV	-0.015	0.007	-0.304	-2.343	0.025 **)	0.878	1.139
SENS	-0.098	0.044	-0.272	-2.208	0.034 **)	0.973	1.028
F value: 10.948 F significance: 0.000			R Square: 0.484 Adjusted R Square: 0.440				
**) significant for p-value<0.01 **) significant for p-value<0.05*							

Source: Calculations made by authors using SPSS software

In conclusion, our model comprises just those independent variables that proved to explain better the influences over the NFI disclosure index with a probability of 95%.

$$NFID = \alpha + \beta_1 (Size) + \beta_2 (Performance) + \beta 3 (Industry) + e_i \quad (2)$$

where: the factor *Size* is expressed by the total assets, while *Performance* is reflected by the financial leverage ratio.

The significance of the results is validated by the R square coefficient value and the analysis of variance performed using the ANOVA test, which reveals each relationship's strength. Thus, the company's size has the strongest influence, followed by its performance and the sensitivity of the industry to which they belong, thus being in line with prior evidence (Duran and Rodrigo, 2018; Sierra-Garcia et al., 2018; Szadziewska et al., 2018; Galant and Cerne, 2017). Moreover, we also tested the robustness of the proposed model. Accordingly, the results confirm that no collinearity exists between the independent variables, all the VIF values being acceptable (the highest one is 1.169 in case of the variable assets), thus discharging multicollinearity problems since the threshold value is about 10 (Field, 2017).

Results obtained by the regression demonstrate that the mandatory character of the EUD does not represent a significant factor driving disclosure (MAND) in the investigated sample, indicating that the *coercive* isomorphism (Di Maggio and Powell, 1983) expected (RQ2) does not occur. Although, a *mimetic* isomorphism (Di Maggio and Powell, 1983) occurs as significant factors guiding disclosure increasing are Size and Performance, which outline similar pattern in disclosure in the investigated sample. In this vein, *normative* isomorphism (Di Maggio and Powell, 1983) has not been observed as no pressure by professional networks has been encountered.

Conclusions

The current development of the concept of NFI and sustainable development could be associated with the evolution process of society, which is requiring more transparency increasingly from companies and additional corporate responsibility for their activities. In the last decades, we have assisted to a greater interest towards an increased visibility of NFI throughout wider disclosures on the environment, corporate governance, society, and human rights. It gradually leads to an increased awareness of the importance of such reports in reflecting organisational practices, recently materialized in the enactment of the non-financial reporting through the EUD.

This openness towards reporting NFI gave us new opportunities to enrich the scientific literature through this topical research aimed to underline the foremost role of the new EUD and its impact on the level of disclosure, with a great interest on those enterprises carrying out activities specific to bio-economy. Furthermore, we added value through this study by grounding this issue of topical debate on the institutional theory and all isomorphism's pressures. Besides these, the novelty of research is ensured by its analysis designed, which effectively combines the pre/post effect inquiry with the regression analysis to accomplish the objectives presumed.

Firstly, the assessment of the impact of the EUD enactment on the level of transparency in case of Romanian listed companies (RQ1), highlights its benefits and shortcoming throughout a pre/post-effect analysis. The results show that the average disclosure level of our sample is higher compared to the Italian companies (Venturelli et al., 2017) or the Polish ones (Matuszak and Rozanska, 2017). Even CSR seems to be slightly developed in Romania since it is perceived as politically correct' within the EU and fashionable. Additionally, companies belonging to an environmental sensitive industry like *Oil & gas and Utilities* encounterd strong NFI increase. Secondly, were identified the main determinants of the level of non-financial disclosure (RQ2), the results reached revealing that the size of the company, its performance and the industry sector in which it operates are the determining factors of the level of disclosure. Surprisingly, while sensitive sectors, such as *Oil & gas and Utilities* that are high poluted industries and for this reason the most challenged by the bioeconomy trend, present more information related to these issues as it was expected, the industry's environmental sensitivity is the least important factor influencing the disclosure level, subclassified by company's size and performance.

In conclusion, the EUD enactment had a positive impact on the level of transparency in case of Romanian listed companies, even though there is some information, even in the particularly environmentally sensitive sectors on sustainability, such as *Oil & gas* and *Industry*, that is still room for improvements. The legal reporting requirement will certainly influence companies to become more active in reporting NFI and set their strategies and directions. With the market growing steadily from one year to another, the Romanian CSR scene is becoming more mature as companies look for long-term interventions rather than quick-fix actions. But in the same time, to become effective, this action must be followed by internal activities inside the companies, as to adopt ethical codes of conduct, to report on their financial results and their socially and environmentally responsible initiatives, to have fair conduct in the competition for new clients and to promote a transparent dialogue with the local community.

Finally, it is worth mentioning that the study's results have beneficial implications on the broad range of users addressed (e.g. regulators, practitioners or academia members), all of them being interested in enhancing companies ESG criteria regarding ethical impact and sustainable practices, especially when bio-economy represents the future. The study has also some limitation concerning the data sources, all information being collected only from companies' annual reports, without considering other means of disclosing information, such as their websites or additional reports. Despite its limits, this study should be a benchmark in assessing the non-financial reporting in Romanian context, offering considerable room for future investigations.

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