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## Article

# EU non-financial reporting research: Insights, gaps, patterns and future agenda

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## EU NON-FINANCIAL REPORTING RESEARCH – INSIGHTS, GAPS, PATTERNS AND FUTURE AGENDA

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**Abstract.** This study approaches the fresh perspective of non-financial reporting (NFR) promoted through the Directive 2014/95/EU (EUD) by providing a state of knowledge, initiatives and approaches on this topic and also by identifying the main patterns developed within this research stream.

Based on a structured literature review and statistical methods as Principal Component and cluster analysis, it investigates the progress of scientific research and design undertaken within NFR topic and discloses insights and critical issues for future research agenda.

The results reveal the focus of the literature on general issues related to EUD, as well as throughout its specific requirements, using GRI or other national/international frameworks. From a methodological point of view, even though empirical studies prevailed, there are also conceptual studies that analyse the new EUD either on sampled countries or across Europe.

**Keywords:** non-financial reporting, Directive 2014/95/EU, structured literature review, research patterns, insights and gaps, future research agenda.

**JEL Classification:** Q5, Q01.

### Introduction

In the context of the world economy continually evolution, companies have to deal with all current challenges to ensure the sustainable development of their business, that implies also a trusted relationship with their stakeholders. Since the latest financial crisis, companies became more transparent with and more accountable toward their stakeholders (Manes-Rossi et al., 2018). Thus, reporting in an integrated, concise and clear manner became one of the top issues for companies. Nowadays, traditional financial reporting model does not adequately meet the stakeholder information needs to assess past and future performance of a company (Flower, 2015). Therefore, it gradually led to the development of new, voluntary

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forms of non-financial reporting (hereafter NFR) (de Villiers & Sharma, 2017), such as social, environmental and governance (ESG) reporting, intellectual capital reporting, corporate social responsibility (CSR) reporting, sustainability reporting (GRI) or the most recent one, integrated reporting (IR), mandatory only in South Africa (Cheng et al., 2014).

In the last decade, at European level, the European Commission (hereafter EC) manifests increasing attention in terms of corporate social and environmental sustainability and responsibility and promotes NFR through the new Directive 2014/95/EU (hereafter EUD). Consequently, for the first time, NFR is going to be part of a mandatory reporting scheme for large public interest entities (Dumay et al., 2019; Dienes et al., 2016), meant to provide adequate data to respond to the stakeholders' information needs (Tiron-Tudor et al., 2019; Manes-Rossi et al., 2018).

Nevertheless, in some EU countries, the practice of NFR is not new (Dyduch & Krasodomska, 2017). In countries like France, Denmark and UK (Makarenko & Sirkovska, 2017) national detailed mandatory NFR requirements existed before the appearance of the EUD, while other countries (Belgium and the Netherlands) became its earlier supporters (Kinderman, 2015). Concerning the EUD, the EU Member States' opinions were divergent during the issuance process, with the extremes of France, the most active supporter of the EUD, Germany, the staunchest, most hard-line opponent, and the UK situated somewhere in-between (Kinderman, 2019).

In this context, the paper timely comes to explore this emerging research path on NFR that raised many divergent opinions, pros, cons, critics and practical challenges. The structured literature review (hereafter SLR) of EUD research articles together with the statistical method used aims to identify the significant research patterns on this stream, to provide a critique looking on NFR and to address future research agendas, thus going beyond the systematic reviews (Di Vaio et al., 2020).

The originality of the study is mainly ensured by the novelty of the research topic approached, NFR enacted by the EUD being of recent interest (Aureli et al., 2019). The paper's contribution to the literature consists in providing one of the first comprehensive reviews meant to uncover insights and critical issues for guiding future research agenda. Moreover, in terms of research design, this study brings novelty by adding to the SLR (Massaro et al., 2016) results from a statistical validation that allows to investigate the progress of research background and design undertaken within NFR studies and to highlight the main research patterns on this topic throughout a mapping visualization.

The main findings reveal the interest of academia for the new EUD not only from a general perspective but also throughout its specific requirements, using as a reference either the well-known GRI or other national/international frameworks. Even though empirical studies prevailed, researchers gave particular importance to theoretical research as well by approaching the new EUD in general, either on sampled countries or across Europe. Empirical studies revealed that they analyzed the new EUD mainly focusing on sampled countries, hence being less interested in studying it at European level. The study addresses not only the needs of theoreticians and practitioners, throughout an up to date image of research providing insights and critical issues in this field, but it is also of great interest for professional and regulatory bodies, throughout the future research agenda.

The paper has three further sections. Firstly, it presents an overview of the NFR enacted by the new EUD. Then, it focuses on the research design, presenting and justifying the SLR method used to investigate the sampled papers. Afterwards, it provides the research results, focusing on the insights and critique of the EUD studies, as well as on the perspectives of future research in this area. Finally, the paper ends with conclusions part, where also acknowledges its limitations and further developments.

## **1. Overview of the non-financial reporting Directive 2014/95/EU regulations**

In the last decades, NFR continuously developed in different forms of voluntary or mandatory ones, like the new European regulation. The EUD addresses large public-interest undertakings and groups with more than 500 employees, to disclose NFI relating to at least environmental matters, social and employee-related issues, respect for human rights, anti-corruption and bribery matters, accordingly aiming to increase transparency, to improve accountability to stakeholders and increase the consumers trust (European Parliament and the Council, 2014). The EUD also requires providing a brief description of the business model and the policies pursued about those matters, including due diligence processes implemented, the outcome of those policies, the principal related-risks linked to the business operations and non-financial key performance indicators relevant to the particular business.

The EUD provisions were transposed into the national laws of the Member States by the end of 2016. The companies that are subject of this Directive are obliged to report the NFI starting with January 1, 2017, by preparing a non-financial statement or a consolidated non-financial statement that should contain information relating to at least the minimum information required by the EUD elements. This statement might also be presented in the form of a separate sustainability report, either in the administration report or in the annual report. Also, if companies do not report one of the minimum required information, they must explain why they do not report this information. Moreover, the EU has issued in 2017, a guideline to support companies in reporting NFI. Both the EUD and EUG Guidelines are mandatory for European public interest entities. As reporting framework, the companies might choose one to provide the information required by the EUD. This gives companies a great deal of freedom when it comes to reporting NFI. However, the EUD does not oblige the companies to audit the NFI statement, but only to provide an assurance that the information was presented, not a verification of the content and way they were presented.

The appearance of this EUD has a significant impact at the European level, being the first form of regulation regarding the NFI disclosure. It is estimated that for about 6.000 companies in Europe, the presentation of NFI will be mandatory. Therefore, by reporting NFI by the companies targeted by Directive 2014/95/EU, the visibility of the companies in the community in which they operate, will increase, enhancing transparency and revealing the impact of these initiatives, helping companies and other stakeholders to proactively manage risks and to reduce negative externalities.

2. Research design

Since the traditional literature reviews are quite subjective, to eliminate this inconvenient a new method gains terrain in accounting studies related to integrated reporting (Dumay et al., 2016), or intellectual capital (Guthrie et al., 2012), namely structured literature review (SLR) developed by Massaro et al. in 2016. The SLR is a ten steps review process for examining a corpus of scholarly literature, to establish the foundation of contemporary research in a particular field and to develop insights, critical reflections, future research paths and research questions (Massaro et al., 2016). In this context, the paper research design follows the Massaro et al. (2016) recommendations and Dumay et al. (2016) model by adding some improvements to highlight the results obtained (Figure 1). Moreover, the results are analyzed using an in-depth combination of various statistical methods and tools aimed to draw possible patents.

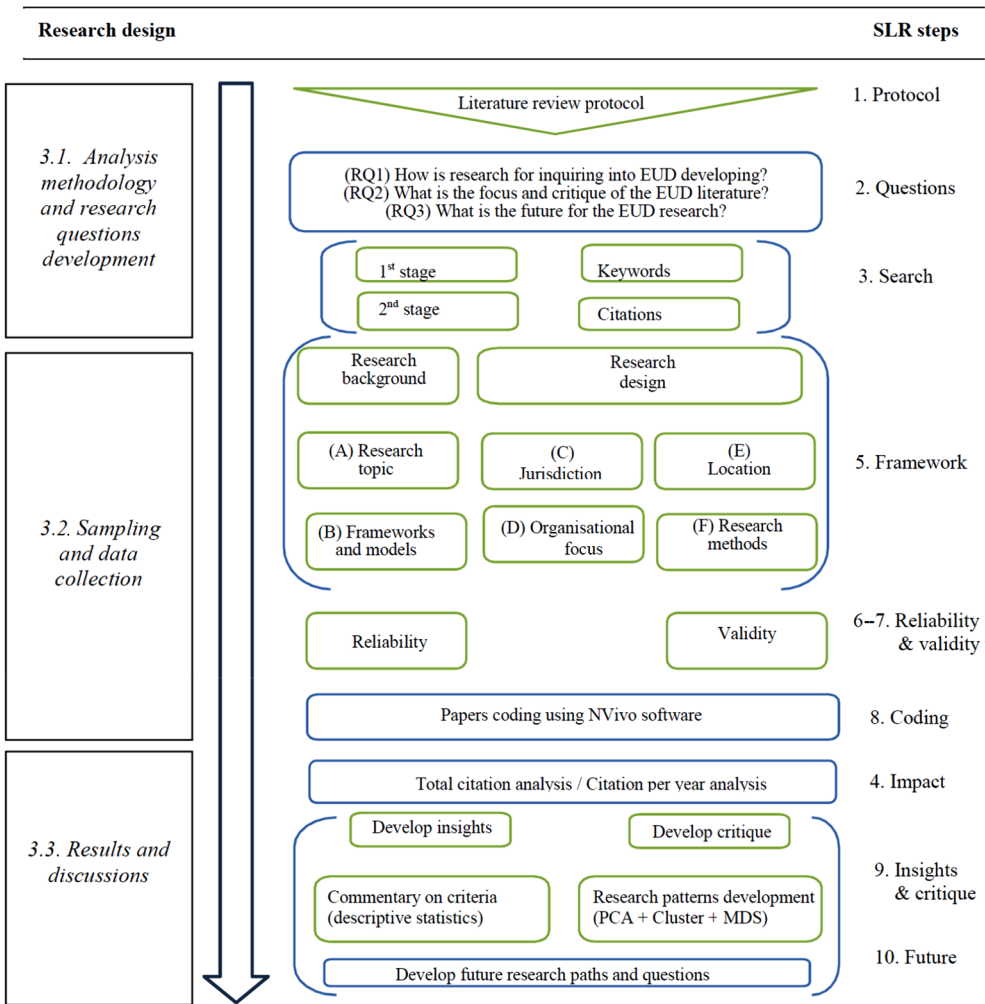


Figure 1. Designing research based on SLR steps

## 2.1. Analysis methodology and research questions development

Following the SLR methodology, (Massaro et al., 2016; Dumay et al., 2016) a *review protocol* (SLRs step 1) was shaped to document the process followed. Since the EUD is in an early stage, a review might contribute to reveal how the research in this field has developed and what the impact of the EUD in the literature was. Based on this outcome, we developed three *research questions* (SLRs step 2), adapted to the targeted field of research. In consequence, are addressed all three tasks of critical research – insights, critics and transformative redefinitions (Alvesson & Deetz, 2000), as follows:

- (RQ1): *How is research for inquiring into EUD developing?* It aims to provide insights into the history of research in this field and how prior literature contributed to its current status.
- (RQ2): *What is the focus and critique of the EUD literature?* It is looking for providing a critical analysis of the existing literature based on a consistent analytical framework.
- (RQ3): *What is the future for EUD research?* It offers potential implications for practice, education, policy and/or regulation, as well as guiding future research agendas.

## 2.2. Sampling and data collection

The selection of the data *sources* for the review (SLRs step 3) involved the exploration of the scientific papers for the period 2014 (January) – 2019 (September), from two databases: Clarivate Analytics of the Web of Science (WoS) platform and Google Scholar. Firstly round of search was using the terms “Directive 2014/95/EU” and “EU non-financial disclosure Directive” as keywords in the title, abstract or keywords of the papers, followed by an analysis of papers’ content (Guthrie & Murthy, 2009; Guthrie et al., 2012) since an article may claim to discuss the analyzed topic, but in reality, do not explore it (Dumay et al., 2016). Secondly, duplicates were eliminate, also those that did not fully or at least partially address the researched topic since they either mentioned the EUD only in a few sentences or made only a brief description of it. For sample relevance and quality, papers without at least one citation published before 2018 were also eliminate. In this vein, the study firstly used as proxies the WoS citations and Google Scholar, since the sample covers both databases. Additionally, to counterbalance the tendency that older articles accumulate more citations than the newer once, the citation per year (CPY) provided by the Harding’s Publish or Perish software was also used (Dumay et al., 2016). In the final sample remain 82 papers: 33 from WoS and 49 from Google Scholar, for the period 2014–2019 (September) addressing the EUD topic.

The *analytical framework* (SLRs step 5) that create the basis of the article coding process consists of six criteria, based on prior literature (Dumay et al., 2016; Guthrie et al., 2012; Parker, 2005), encompassing 45 attributes adapted to our analysis regarding the EUD (see Table 1). Since the SLR process is not a rigid approach but develops iteratively (Dumay et al., 2016), all these changes and additions made on the analytical framework developed are detailed when discussing the results and critique developed from the analysis of each criterion. For the content analysis using paper as an analytical unit, is *reliable* (SLRs step 6). Krippendorff’s alpha (K-alpha) as a measure of reliability met the recommended threshold of 0.80 (Krippendorff, 2013). Moreover, to ensure the *validity* of the analysis (SLRs step 7),

different sources of evidence were used (e.g. cited and non-cited papers, conference and academic journal papers). Reaching the same results added extra value to the conclusions while finding differences created additional avenues for further investigations. Finally, this paper used a QCA software, namely the Nvivo (12 Plus) software in the process of *coding and analyzing* (SLRs step 8) the articles.

### 3. Results and discussions

#### 3.1. Evolution of the research for inquiring into EUD development (RQ1)

Descriptive statistics provides insights into the history of EUD research development. Regarding the publication year and authorship (see Figure 2) since the issuance of the new EUD, the interest in researching this topic was continuously increasing.

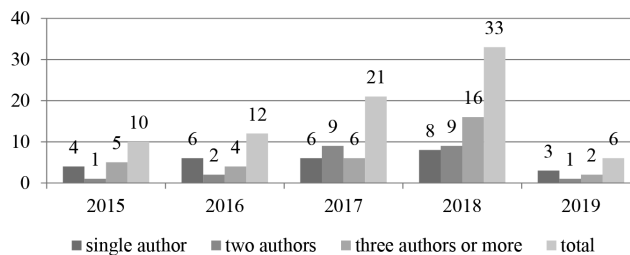


Figure 2. Papers analysis based on the publication year and the number of authors

Table 1. Top articles by citations ranking places for tables and figures

Reference	Rank / No. of citations <sup>*)</sup>		
	WoS	Google	CPY
Dyduch and Krasodomska (2017)	1/13	2/30	3/15
Manes-Rossi et al. (2018)	2/12	5/19	1/19
Matuszak and Róžańska (2017)	3/11	3/23	4/11.5
Kristofik et al. (2016)	4/9	–/11	–/0.67
Dumitru et al. (2017)	5/8	4/19	5/9.5
Camilleri (2018)	6/8	1/34	7/8.5
Kinderman (2015)	7/6	9/16	9/5.33
Venturelli et al. (2017)	8/3	–/18	–/9
Buhmann (2018)	9/3	–/4/	–/4
Maj (2016)	10/3	–/11	–/3.67
Grewal et al. (2018)	–/–	7/18	2/18
Carini et al. (2018)	–/–	–/6	8/6
Luque-Vílchez and Larrinaga (2016)	–/–	10/16	10/5.33

Note: <sup>\*)</sup> as at 1 November, 2019.



It can be noticed that three-quarters of the sample (60 papers) appeared after its transposition into the national laws (by the end of 2016) and almost half of it (39 papers) after the first period of reporting according to the new requirements. Concerning the number of authors, there is a preference for team work on this topic especially starting with 2017, the implementation year.

Moreover, remarkable insights throughout an in-depth analysis of the sampled papers in terms of citations metrics, allow commenting on the papers' quality (Massaro et al., 2016). From the comparative analysis performed (see Table 1), it can be firstly noticed that there are seven common papers present in all rankings (Dyduch & Krasodomska, 2017; Manes-Rossi et al., 2018; Matuszak & Róžańska, 2017; Dumitru et al., 2017; Camilleri, 2018; Kinderman, 2015; Venturelli et al., 2017), which denotes that these papers are indeed highly-qualitative, having the greatest importance in the EUD research field. Moreover, the CPY analysis reveals that there are several papers which loosed their leading position (e.g. Kristofik et al., 2016) leaving room for more recent papers (Grewal et al. 2018; Carini et al., 2018). This mainly indicates that there is an increasingly strong interest among authors in citing the latest EUD research results, but also that most papers have been performed in recent years.

### **3.2. Focus and critique of the EUD literature (RQ2)**

#### **3.2.1. EUD strengths and weaknesses**

Even though NFR imposed by the EUD is in an emerging stage, international literature already highlighted its strengths and weaknesses, based both on theory and practical evidence.

The foremost benefit expressed was the standardization of NFR that might positively improve the transparency of social and environmental information, consequently increasing its quality and ensuring comparability at international level and between different sectors (Kristofik et al., 2016). Therefore, the EUD comes to complete an existing regulatory gap, being seen as a solution for the problems of over-reporting of inadequate information, insufficient transparency of NFI and low comparability (Kristofik et al., 2016; Lament, 2017; Kamiński, 2018). As a result, the EUD has an essential role in the convergence process towards corporate social responsibility, being a step forward in the development of sustainability reporting (Manes-Rossi et al., 2018). It also constitutes a big step ahead (Fijałkowska, 2016; Markota-Vukić et al., 2017; Sierra-Garcia et al., 2018; Camilleri, 2018) into the process of NFR harmonization across Europe (Caputo et al., 2020; La Torre et al., 2018; Carini et al., 2018), despite its status of a pioneer in establishing an European legislative framework for the NFI disclosure (Maj, 2016).

On the other hand, the EUD goes beyond the value assessment, shareholder and investor information and financial performance, thus not only serving the information function but also focusing on transformation (Eccles & Spiesshofer, 2015). Hence, it increases the role of accountants and auditors in the field of CSR at the European level (Dumitru et al., 2017). Finally, the EUD is not too restrictive (Monciardini et al., 2017; Aureli et al., 2018; Camilleri, 2018), leaving much freedom to the states and companies that fall under its incidence (Ahern, 2016) (e.g. reporting format and framework, the “comply or explain” principle).



Despite all these strengths, the EUD was also criticized by the scientific literature for its weaknesses. Thus, La Torre et al. (2018) stated that the EUD is a backward and old-fashioned policy because, in the era of Big Data, where digitalization and technological advances offer better ways for communicating information, the EUD is still anchored to traditional forms of periodic reporting. Therefore, if companies would report NFI more often by media, communication with stakeholders would be easier and more sincere.

Another criticism addressed to the EUD is the lack of standardization of the external verification of the non-financial statement by an independent assurance services provider (Ahern, 2016), that is against the EUDs objectives of improving corporate accountability and NFI comparability (La Torre et al., 2018). Therefore, according to the EUD, the auditor will only check whether the non-financial statement or the separate report exists, without verifying their content (Dumitru et al., 2017; Sierra-Garcia et al., 2018; La Torre et al., 2018; Saenger, 2017) unless one of the EU Member States requests that verification. Furthermore, it is considered a weakness of the company that does not make an assurance of the non-financial statement (Buhmann, 2018). Thus, since assurance of sustainability information is an essential aspect for the investors in their decisions that can increase the relevance, consistency, comparability, reliability and truthfulness of information reported (Aureli et al., 2019; Müller et al., 2015; Grewal et al., 2018), if a company decide only to do a formal review of the non-financial statement (Müller et al., 2015), that information will not present a value for investors (Fijałkowska, 2016).

On the other hand, even though the NFI assurance increases its quality by providing greater credibility to information users (La Torre et al., 2018), the process of information verification is rather costly, time and effort consuming (Fijałkowska, 2016; Grewal et al., 2018). Besides, companies may encounter other significant sources of costs, such as those for preparing and disseminating the new information, which could enhance competitiveness between those entities that have so far voluntarily reported NFI and those that have not done it before, the latter having higher costs (Grewal et al., 2018). Consequently, although the verification of NFI is voluntary for companies falling under the EUD, according to CSR Europe and GRI (2017), countries such as Belgium, Bulgaria, Denmark, France, Italy, Latvia, the Netherlands and UK have enacted the mandatory assurance by involving an auditor, while the rest of the EU countries have adopted the optional verification approach.

Finally, the flexibility offered by the EUD, which was perceived by some researchers as a positive aspect, is also intensely criticized because it gives companies a high autonomy in choosing the method and the content of the information disclosed (Fijałkowska, 2016). As a result, it is seen as a kind of “all things for all people” that creates ambiguity in interpretation (Eccles & Spiesshofer, 2015). By this freedom in choosing different formats and reporting frameworks (Müller et al., 2015), the comparability, consistency and uniformity of information are limited, while the comparisons of companies’ performances are difficult to achieve, even within the same sector (Eccles & Spiesshofer, 2015). Moreover, the EUD does not impose strict and detailed rules for disclosure, being ambiguous as regards the materiality (Aureli et al., 2018) and the minimum of information to disclose (Fijałkowska, 2016; Coluccia et al., 2018), as well as lacking sanctions for not implementing it. Accordingly, all these seem to happen under the influence of a directive that has been weakened to the point of insignificance (Kinderman, 2015) and under the incidence of an inefficient regulation (Coluccia et al., 2018).

This controversial theoretical background, marked by the new EUD that enacts the NFR as mandatory to the European countries, its practical implementation being at an early stage, creates an excellent opportunity to explore this area, for a better understanding of the effects and impacts of the EUD (La Torre et al., 2018). Consequently, this study comes to explore this challenging research path, being interested to see how academia is responding to research into the EUD topic.

### 3.2.2. Structured analysis of the EUD literature

The structured analysis of the existing literature addresses each criterion of the analytical framework (Guthrie et al. 2012; Dumay et al., 2016) with statistical methods and tools meant to identify the major research patterns within this stream, thus adding value the scientific literature.

In the first stage, there are provided arguments for choosing the criteria analyzed, as well as insights and critics grounded on the results reached. All the criteria used were based on the original classification scheme of Guthrie et al. (2012) with adaptations to the specific of this research (Table 2).

#### (A) Research topic

The papers are grouped (see Table 2) on analyzing all EUD minimum requirements (e.g. Manes-Rossi et al., 2018; Dumitru et al., 2017), or certain requirements or related issues as. The EUD transposition into national laws or the NFI quality in the light of the EUD related issues) and an “others” group for papers that did not fall into any of the above particular attributes. These are studies that address the Directive in general (e.g. Kinderman, 2015), articles that refer about NFI (e.g. Aureli et al., 2019) or are more focused on CSR or sustainability reporting (e.g. Tiron-Tudor et al., 2019).

Table 2. Analytical framework for analysing EUD papers

Section 1 – Research background			
A Research topic		B Frameworks and models	
A1 All EUD minimum requirements	13	B1 National / international / other	7
A2 Certain EUD requirement	20	frameworks presented and/or compared	
A2.1 Environmental, social and governance (ESG)	6	B1.1 National frameworks	1
A2.2 Environmental aspects	5	B1.2 International frameworks	1
A2.3 Social aspects	4	B1.3 Other frameworks	5
A2.4 Human rights aspects	4	B2 GRI framework presented / mentioned	44
A2.5 Corruption and bribery aspects	1	B2.1 GRI framework	4
A2.6 Auditing and assurance	2	B2.2 GRI and other frameworks	40
A3 EUD related issues	9	B3 GRI used in empirical research	20
A3.1 EUD transposition into the national laws	6	B4 None	11
A3.2 NFI quality in the light of EUD	3		
A4 Other (including general)	38		
Total	82	Total	82

End of Table 2

Section 2 – Research design			
C Jurisdiction		D Organisational focus	
C1 International	37	D1 Publicly listed	26
C1.1 General	36	D2 Financial institutions	5
C1.2 Industry	1	D3 Entities covered by the EUD	14
C2 National	18	D3.1 Entities directly covered by the EUD	6
C2.1 General	6	D3.2 Entities preparing CSR reports	7
C2.2 Industry	12	D3.3 Entities exceeding 1000 employees' threshold	1
C3 Organisational	27	D4 General / Other	37
C3.1 Multiple	26		
C3.2 Single	1		
Total	82	Total	82
E Location		F Research methods	
E1 Europe	15	F1 Case/Field study/Interviews	5
E2 Sampled countries	48	F2 Content analysis/Historical analysis	33
E3 General / Globally	19	F3 Survey/Questionnaire/Other empirical	7
		F4 Commentary/Normative/Policy	37
		F5 Literature review	0
Total	82	Total	82

The most papers address the EUD in general, followed by the articles that empirically approached all the minimum requirements of the EUD, and then the studies focused on certain EUD requirements, the most common being ESG aspects together or separately approached. Finally, it can be noticed a low interest in researching the EUD transposition into the national laws or the quality of the NFI in the light of the EUD. These results were somehow expected, as the EUD is still at its first stage and most studies focused on sustainability and the NFI disclosure, thus being related to the new EUD in general. Thus, it seems that the research process on this topic is normal. Firstly, there are studies that make the EUD known for its requirements, and then there are studies that show what is the level of the entities concerned before the entry into force of the EUD, whether they have a satisfactory level of reporting or not, and, finally, if they are ready for reporting a minimum of NFI.

### (B) Frameworks and models

Since the EUD allowed entities to base on both national and international frameworks when reporting NFI, there is a diversity of approaches, from “National frameworks” (e.g. Lament, 2017), to “International frameworks” (e.g. Manes-Rossi et al., 2018) and “Other frameworks” (e.g. Camilleri, 2018). Many papers are referring strictly at the Global Reporting Initiative (GRI), the most representative and famous international initiative in the field of sustainability reporting (Persić et al., 2017) and also most popular worldwide (Lament, 2017). For this reason, there are papers dealing only with the GRI framework (e.g. Kinderman, 2015; Venturelli et al., 2017) and also papers mentioning or presenting GRI alongside other frameworks (e.g. La Torre et al., 2018). A separate group refers to studies using GRI in empirical research (e.g. Carini et al., 2018; Venturelli et al., 2017). Still, some papers did not mention any framework (e.g. Grewal et al., 2018) in their debate concerning the EUD. Con-

sequently, the GRI is by far the most popular framework, being mostly mentioned together with other frameworks, but also explicitly used in empirical researches throughout the GRI database. These results are interesting since the EUD did not impose a unique framework. In this sense, international literature stated that if the GRI were proposed as a single framework, the comparability of NFR would increase (Matuszak & Różańska, 2017). However, this situation already raised questions (La Torre et al., 2018) and, consequently, it still remains interesting to see why the entities covered by the EUD chose a particular framework and what the reason for reporting according to it was.

### *(C) Jurisdiction*

The sample is grouped in without an empirical base (e.g. Aureli et al., 2018), or with an empirical approach by focusing either on nations/regions or organisations. Afterwards, each category was sub-classified into “General” and “Industry” for both “International” and “National” categories (e.g. Camilleri, 2018), while the “Organisational” category was split into “Multiple” (e.g. Manes-Rossi et al., 2018) and “Single” (e.g. Maj, 2016).

Results reveal that an essential part of the papers adopt a general approach to the EUD, which was expected as it is still in the first stage of development. On the other hand, the majority of papers followed an empirical approach, with the highest interest to specific organizations, followed by certain industries, while only six empirical papers addressed the EUD in general. An in-depth examination of the period of analysis considered within these papers revealed that they pay almost the same attention to the period before and after 2014, the year of the EUDs issuance, while only eleven papers followed a time-horizon encompassing both periods. This evidence denotes that researchers were interested in the stage of NFR, even when it was not yet mandatory, thus aiming to assess organizations’ preparedness for NFI disclosure according to the new EUD. However, it is worth mentioning that there is not yet any empirical study that presents the reporting status of entities after 2018.

### *(D) Organisational focus*

Within this criterion, this study kept two attributes used in prior literature (Dumay et al., 2016; Guthrie et al., 2012), namely “Publicly listed” and “General/Other”, comprising the organisations that did not fall into any other categories. Besides, there were added as attributes: “Financial institutions”, including banks or/and insurance companies or/and financial intermediaries, as well as “Entities covered by EUD”, encompassing as well the enterprises that already prepared CSR reports and entities exceeding the employees’ threshold.

Aside from “General/Other” category (e.g. Aureli et al., 2018; La Torre et al., 2018; Dumay et al., 2019), most sampled studies addressed the publicly-listed companies (e.g. Venturelli et al., 2017; Carini et al., 2018). On the other hand, only a few cases the researchers focused on banks or insurance companies, companies that already prepared CSR reports or those expressly covered by the EUD.

### *(E) Location*

The attributes related to location suit this particular study focused on the EU Member States, where the EUD is applicable as: either studies focused on a wide scale at the European level or those addressing the EUD in the global context, and a separate group of “Sampled

countries” studies. In addition to the studies that addressed the EUD in general (19 articles), the most researched country is Poland (with 15 studies), because the most studies are written by authors from Poland, who chose as a research country their own. In other countries the number of papers is quite modest: Croatia (4), Italy (3), Germany (2), Romania (2), Spain (2), UK (2), Ukraine (2), Czech Republic (2), Hungary (1), Netherlands (1) and Greece (1).

#### *(F) Research methods*

All five attributes from Guthrie et al. (2012), are used being either empirical or normative (Dumay et al., 2016). Thus, the empirical studies were split into three categories, namely “Case/Field study/Interviews” (e.g. Camilleri, 2018), “Content analysis/Historical analysis” (e.g. Manes-Rossi et al., 2018; Dumitru et al., 2017) and “Survey/Questionnaire/Other empirical” (e.g. Müller et al., 2015), while the theoretical ones were divided into “Commentary/Normative/Policy (e.g. Ahern, 2016; Saenger, 2017) and “Literature review”.

The most used empirical research method within the sampled studies was “Content analysis/Historical analysis”, whereas research attempting to investigate the EUD rhetoric in practices either through “Case/Field study/Interviews” or “Surveys/Questionnaire/Other empirical” is still scarce. However, even though there is a growing trend to examine the EUD empirically, the normative approach prevails overall.

### **3.2.3. Possible EUD research paths**

In the next stage, the six categories discussed above were gathered into two separate sections, namely “Research background” and “Research design” to develop certain patterns on the EUD research background, as well as regarding the research design encountered within the sample papers analyzed. Since there are not any prior assumptions in this vein, an Exploratory Factor Analysis (EFA) was performed by applying the Principal Component Analysis (PCA) to analyze interrelationships among a large number of variables and to gather them into more parsimonious and manageable groups. The criteria used in the analytical framework are compressed into a smaller set of principal components encompassing interrelated criteria that allowed us to identify different patterns of research. Since many correlations between variables tested exceeded the 0.30 threshold, a subsequent rotation using the Varimax method was performed to enhance the interpretability of the results.

Firstly, the PCA on the criteria related to the EUD theoretical framework was performed (Section 1 of the analytical framework), and five deemed important components were identified by applying the Kaiser’s rule and the scree test, all of them having their eigenvalues greater than 1, variables’ communalities ranging between 0.542 and 0.934, and explaining 81.02% of the total variance (see Table 3).

Afterwards, the same analysis was performed on the criteria related to the research design on the EUD (Section 2 of the analytical framework) reaching similar results (five components with eigenvalues greater than 1, explaining 87.58% of the total variance, as Table 4 reveals, and variables’ communalities ranging between 0.540 and 0.992).

Consequently, there were developed five patterns on each section– the research background and design of the EUD (see Table 5).

Table 3. Components analysis – model summary

Total Variance Explained			
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	5.396	38.541	38.541
2	1.843	13.164	51.705
3	1.595	11.394	63.098
4	1.309	9.350	72.448
5	1.201	8.575	81.023
Extraction Method: Principal Component Analysis			

Table 4. Components analysis – model summary

Total Variance Explained			
Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	1.904	23.797	23.797
2	1.521	19.019	42.815
3	1.274	15.928	58.743
4	1.196	14.945	73.688
5	1.112	13.895	87.584
Extraction Method: Principal Component Analysis			

Table 5. Assigning analytical framework's attributes into research patterns

	Research patterns				
	(1)	(2)	(3)	(4)	(5)
Research background	A4; B2; B3	A2; B3	A1; B1	A3; B1	A2; B4
Research design	C1; D4; E3; F4	C3; D1; D2; E2; F1; F2; F3	C2; D3; E1; E2; F2; F3	C2; D1; E; 1 F2	C1; D4; E1; E2; F4

To complete the Principal Component Analysis results, a hierarchical cluster analysis was run by applying Ward's method to group the sampled papers analyzed that share common research patterns, either on their research background or on the research design of the EUD. Throughout this type of clustering, both the similarity of cases within each cluster and the dissimilarity between them were maximized (Burns & Burns, 2008) and reached more homogenous groups (Verma, 2013). Accordingly, there have been created five different clusters encompassing papers that are more alike, following a particular pattern on research background and research design of the EUD (see Table 6 and 7).

Table 6. Linkage between clusters and patterns on research background

Cluster	Research pattern's description	Papers
"1"	EUD general approach based on the GRI framework	22
"2"	Certain EUD requirement by empirically using the GRI framework	14
"3"	All EUD minimum requirements in national/international frameworks	20
"4"	EUD related issues grounded on national/international frameworks	24
"5"	Certain EUD requirement without any framework	5

Table 7. Linkage between clusters and patterns on research design

Cluster	EUD Research pattern's description	Papers
"1"	Theoretical general approach globally	18
"2"	Empirical approach at organisational level focused on public listed entities and/or financial institutions from sampled countries	20
"3"	Empirical approach focused on entities covered by the EUD at national level from sampled countries or across Europe	18
"4"	Empirical approach at national/european level focused on public listed entities	7
"5"	Theoretical general approach of the EUD on sampled countries or across Europe	19

Afterwards, this study analyzed the statistically significant differences between clusters by applying the Kruskal-Wallis test (see Table 8), for reliability issues.

Table 8. Significance test results for clusters' difference

Test Statistics <sup>a,b</sup>	Theoretical design criteria		Research design Criteria			
	Research topic	Frameworks and model	Jurisdiction	Organisational focus	Location	Research method
	(A)	(B)	(C)	(D)	(E)	(F)
Chi-Square	67.851	71.283	70.466	67.055	68.744	72.011
Df	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000
a. Kruskal Wallis Test						
b. Grouping Variable: Ward Method						

Finally, this study uses the Multidimensional Scaling technique (MDS) to provide a visual mapping of the clusters according to their statistical proximity (see Figure 3 and 4). It provides an excellent fit of correspondence between distances among points on the MDS map and the input matrix since the value of the Stress test (Kruskal's type I) is less than 0.1 (0.0119, respectively 0.0777).

Accordingly, from the research background perspective, four predominant streams can be detached represented by clusters "1" to "4" almost equal as constituents (between 14 and 24 papers). Thus, authors expressed a great interest in approaching the new EUD not only



from general perspective (cluster “1” and “4”) but also throughout its specific requirements (clusters “2” and “3”), using as a reference either the well-known GRI (cluster “1” and “2”) or other national/international frameworks (cluster “3” and “4”).

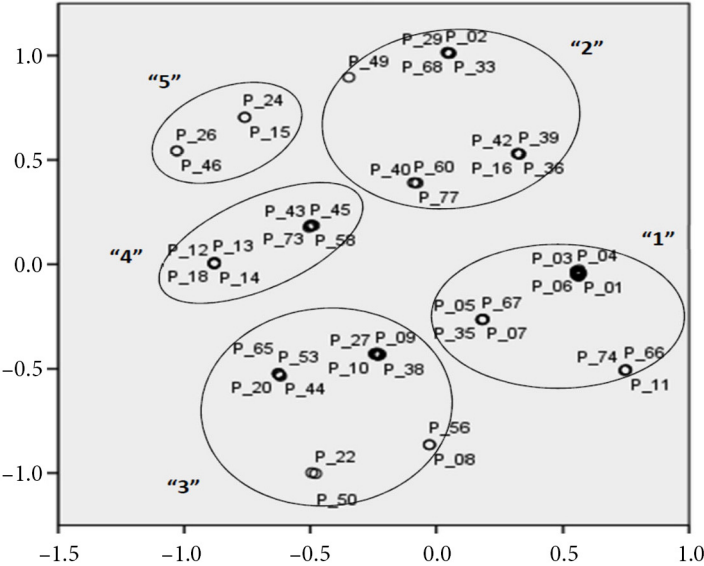


Figure 3. Papers' mapping according to patterns on research background

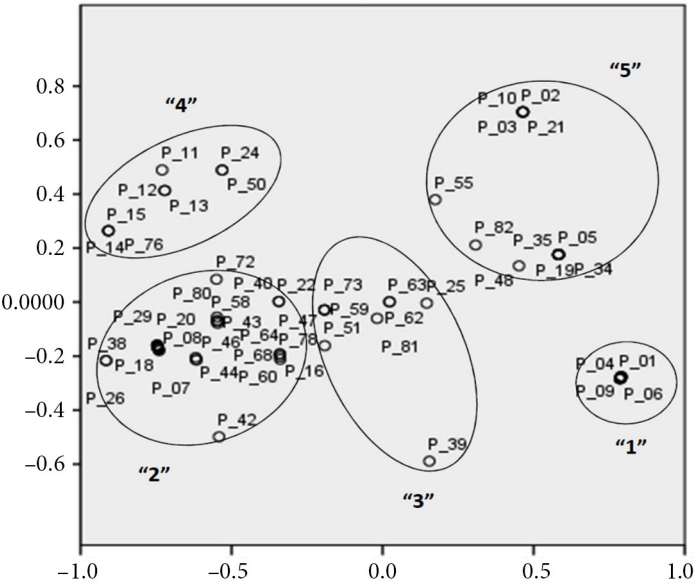


Figure 4. Papers' mapping according to patterns on research design

From the research design perspective, even though empirical studies prevailed (45 papers), authors seem to pay particular importance to theoretical research as well by approaching the new EUD in general across Europe (cluster “1” and “5”). Empirical studies revealed that the researchers analysed the new EUD mainly focusing on sampled countries (cluster “2” and “3”), while there was less interest in studies at European level.

### 3.3. The future for EUD research (RQ3)

For addressing future research agenda, this study not only took a critical stance on the EUD but also acknowledged that there are still significant opportunities for researchers to address this issue. Thus, the EUDs existence and its significant impact since it enter into force shortly worth investigation to offer potential implications for practice, education, policy and/or regulation, as well as guiding future research agendas.

The interest in researching this field was continuously increasing during the period analyzed, but accounting researchers have long been accused of their little contribution to practice. In this context, it would be interesting to see how entities covered by the EUD report on the NFI according to the new requirements. In this vein, if the academics want to contribute more in this topic, they need to leave their “academic ivory towers” and engage more with practice and the development of the EUD (Dumay et al., 2016).

Since the new EUD is in its first stage, there are no studies to establish robustly the benefits of it, as it was the case of other types of reporting (e.g. IR) (Dumay et al. (2016). However, this is not to be criticized yet, because for the short period since the EUDs issuance the entities covered by it disclosed at least certain information if not all the minimum requirements. For that matter, it could be perceived more as a future research opportunity to show whether entities really have to earn through this EUD or they have more costs and report only to comply with it. This is another situation where academics need to cooperate with practitioners in the targeted field, to identify the benefits or disadvantages of the EUD and thus to better evaluate its consequences. Evidence reveal that developed countries had an excellent level of NFI disclosure before the issuance of the new EUD (CSR Europe and GRI, 2017). In this sense, it would be worth performing comparison analysis between countries and sectors, to see if emerging countries will improve their reporting level after its enactment, as well as to analyze which of the minimum information required is reported more, depending on the field of activity.

Finally, since the EUD offers considerable flexibility in terms of reporting format and framework, performing the assurance and audit, as well as by functioning under the “comply or explain” principle (Aureli et al., 2018) it leaves freedom to the countries and entities that fall under its incidence. In this vein, it would be interesting to consider for future research an analysis of the reasons why entities report following a particular regulatory framework (e.g. GRI framework, as most evidence reveal).

## Conclusions

In the last decades, grounded on enhanced sustainability desired, NFR gained great importance, by providing information on environmental, social and governance issues to embrace all stakeholders' needs. The highest initiative in supporting this trend was the issuance of the new EUD enacting NFI disclosure aimed to improve the comparability of information and to increase accountability. The new EUD not only marked the beginning of a standardized reporting of NFI across Europe, but it is also a transparency enhancer tool according to its objective: to increase the relevance, consistency and comparability of information disclosed. In this sense, EUD comes to facilitate the transparency of environmental and social information, to measure and monitor the performance of undertakings and their impact on society, which is vital for managing change towards a sustainable global economy by combining long-term profitability with social justice and environmental protection.

According to international literature, transparency is one of the essential criteria for creating social trust, and it is very difficult to build a civil society without it. Thus, the EUD aims to provide interested parties with a more comprehensive picture of firm performance and represents an important step towards greater corporate accountability.

In this context, the present study approached the new EUD aiming to enrich the scientific research through a structured literature review (SLR) meant to identify the significant research patterns on this stream, to provide insights and critics on NFR and finally to address future research agendas. The novelty of this study is ensured by its research design, where various statistical methods and tools (e.g. PCA, cluster analysis) were used within the SLR analysis to provide more reliable results.

Since the issuance of the new EUD the interest in researching this topic was continuously increasing. However, NFR according to it is in its first stage, where most researchers try to criticize the provisions of the EUD, recognizing the advantages and disadvantages of this regulation. A vast majority of studies focused on analysis the level of NFR through different types of NFI disclosed by entities before the EUD came into force, thus looking for assessing the level of preparedness for the new regulation. Thus, some studies reveal a good level of completeness of NFI, as well as countries that do not have a satisfactory level of disclosure.

The research patterns created reveal that authors approached the new EUD in general, as well as throughout its specific requirements, basing either on the GRI or other national/international frameworks. Even though empirical studies prevailed, authors conducted theoretical research, too, by approaching the new EUD either on sampled countries or across Europe. In the empirical studies performed, they mainly analyzed the new EUD focusing on sampled countries, thus being less interested in studying it at European level.

Finally, were aware of the limits of this research mainly represented by the sample of papers analyzed, as well as the subjectivity of interpretations. However, the SLR method employed provides more reliability than a traditional literature review. Consequently, there is still room for further research, among the future research agendas being an in-depth analysis of the EUDs benefits based on practical evidence, as well as comprehensive comparisons analyses within countries and fields of activity. Due to the EUDs flexibility, it is worth investigating the reasons beyond its implementation.

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## Author contributions

Cristina Alexandrina Ștefănescu, Adriana Tiron-Tudor and Ecaterina Monica Moise conceived the study and were responsible together for the design and development of the data analysis, data collection and interpretation.

## Disclosure statement

Authors declare that they have any competing financial, professional, or personal interests from other parties.

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