Ewa Różańska, Łukasz Matuszak

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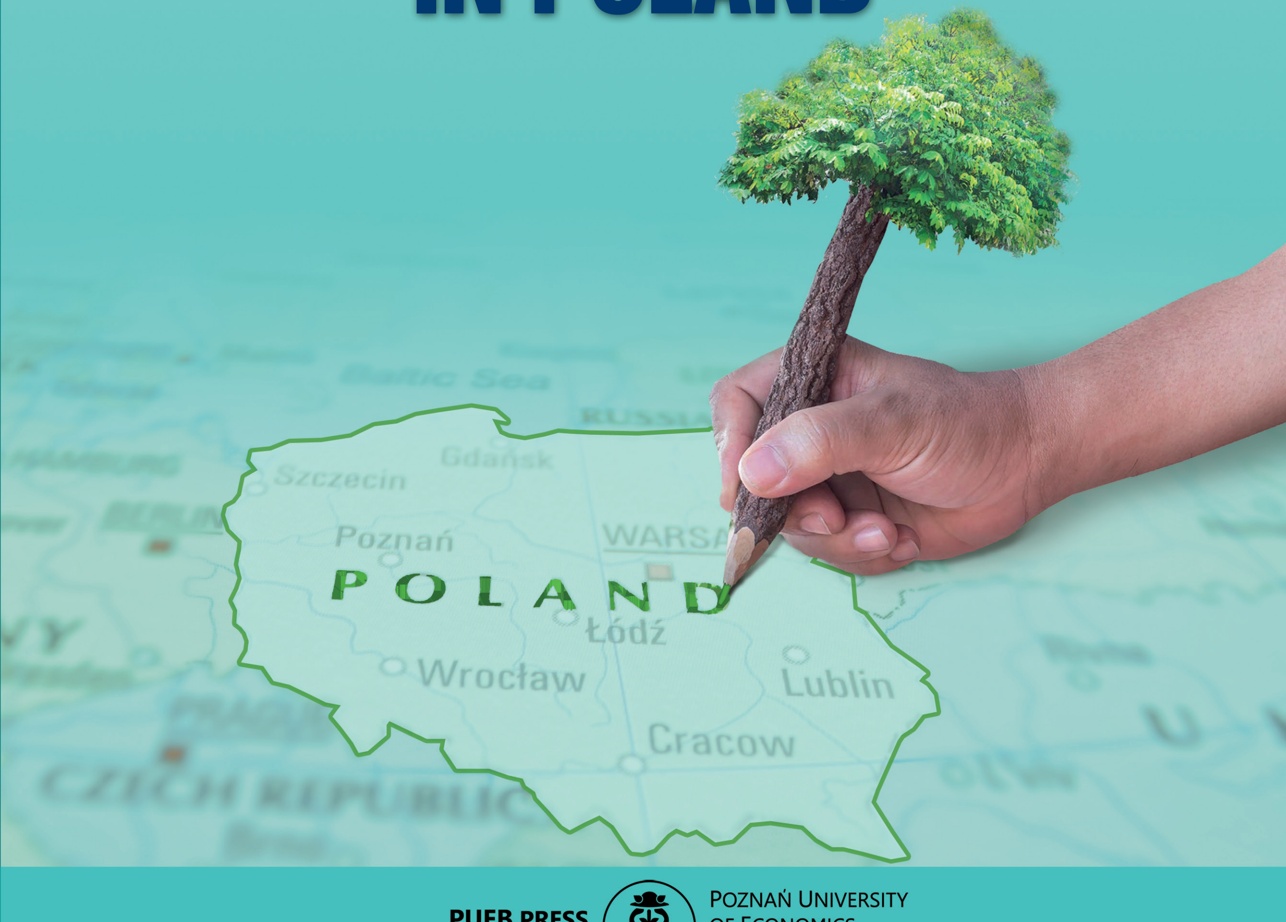

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Ewa Różańska Łukasz Matuszak

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ul. Powstańców Wielkopolskich 16, 61-895 Poznań, Poland
phone: +48 61 854 31 54, 61 854 31 55
www.wydawnictwo.ue.poznan.pl, e-mail: wydawnictwo@ue.poznan.pl
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Introduction

1. Motivation

The growing threat of a global environmental and social crisis poses urgent challenges for accounting scientists, regulators and businesses to deal with future pessimistic scenarios. The latest edition of the Carrots and Sticks report (Van der Lugt et al., 2020) shows that the ESG (environmental, social and governance) agenda goes mainstream. This report, among others, highlights the growing prominence of mandatory non-financial disclosure requirements, ones introduced by regulatory and self-regulatory actors in the public and market spheres. It also documents that Europe dominates in the numbers of non-financial reporting provisions. Moreover, the KPMG Survey of Sustainability Reporting 2022 (KPMG, 2022) indicated a continuous growth of sustainable reporting rates across Europe between 2011 and 2022, and the largest increase in the last two years, likely influenced by pressure from regulators, investors as well as ESG analysts and consumers.

In recent years, capital market participants have increasingly been prioritising the importance of non-financial information in the decision-making process. Thus, it was essential to ensure mandatory disclosure by reporting organisations. The EU has made progress towards meeting the information needs of investors and other stakeholders regarding long-term risk of environmental and social issues. To this end, the EU issued Directive 2014/95/EU (the Directive) on the disclosure of non-financial and diversity information (European Union, 2014), referred to as the Non-Financial Reporting Directive (NFRD). It also published Guidelines 2017/C215/01 on non-financial reporting (European Commission, 2017) with Supplement 2019/C 209/01 on reporting climate-related information (European Commission, 2019). According to the Directive, large companies (exceeding 500 employees) having headquarters in Member States are required to provide a series of ESG statements. Companies were expected to comply with the disclosure requirements of the locally transposed laws by 2018.

The pressure on companies to be more transparent is expected to grow with more regulatory action on the horizon, such as the Corporate Sustainability Reporting Directive (CSRD) and new mandatory standards, called the European Sustainability Reporting Standards (ESRS), which significantly and unprecedentedly extend the existing non-financial reporting requirements in the EU from 2024 onwards.

The present reporting obligation at the European level, as well as the global trend of mandatory ESG reporting, increases the need for a better understanding of its consequences and opens up new perspectives for research. Understanding the potential changes in the quantity and quality of disclosed information due to the implementation of regulations may be crucial not only for academics but also for practitioners and legislators when developing new or reviewing and updating the existing regulations, including those undertaken by the European Commission and by the governments of individual member states.

As Korca and Costa (2021) argue, the need for a longitudinal analysis that determines the actual impact of Directive 2014/95/EU on non-financial disclosures remains. Moreover, the authors suggest that future research in this avenue should consider the contextual factors and employ appropriate theoretical approaches in order to interpret the Directive's diverse effects.

Therefore, this monograph attempts to answer the above calls building a theoretical framework from complementary theories, such as legitimacy theory, stakeholder theory and institutional theory, and focusing on the non-financial reporting shift from voluntary to mandatory in a six-year period. It aims to examine whether the mandatory non-financial reporting under the Directive, as well as other relevant determinants, has an impact on the quantity and quality of disclosure practices in Poland, a country that has transposed the Directive into national law with the Accounting Act (AA, 2016).

Focusing on Poland, which belongs to the region of Central and Eastern Europe (CEE), was justified for the following reasons. First, as Albu et al. (2021) note, more research is needed on the formation of the social and environmental reporting field in economies outside the West, and especially in CEE countries. These countries have a unique institutional context, which is likely to shape reporting practices, because they faced a dramatic transition from the communist ideology to the free market economy. Second, in CEE countries, the sustainability reporting rates are clearly lower than in Western European countries. However, since 2017, possibly due to the NFRD institutional changes, this gap has been shrinking as reporting rates in Eastern Europe have increased significantly, while growth has slowed down in Western Europe (KPMG, 2020). Third, Matuszak and Różańska (2021) note that companies subject to the NFRD in Poland are the largest setting in the CEE region. Therefore, the authors recommend their analysis in order to draw conclusions relevant for the rest of the region. Forth, the Polish setting is, as Zarzycka and Krasodomska (2022) believe, not only interesting but also relatively unexplored.

2. Content

Throughout ten chapters of this book, we refer to non-financial reporting and we ask how the Directive has shaped the quantity and the quality of specific information disclosed by Polish listed companies and assess its effectiveness as a regulatory instrument.

In chapter 1, we explore the effect of the Directive on the disclosure of sustainability aspects in the description of business models and the quantity and quality of relevant non-financial key performance indicators (KPIs). Our findings show that despite a significant improvement after the introduction of the Directive, strategic sustainability issues both affected by and influencing a company are still scarcely disclosed in business model descriptions. Furthermore, we have found that the percentage of companies disclosing at least one non-financial KPI anchored to the company's business model increased significantly in the period after the introduction of the Directive. We have also documented a general reduction in the average number of non-financial KPIs and a decrease in their overall quality after the implementation of the Directive.

In chapter 2, we investigate the extent of non-financial disclosure related to policies and their outcomes and its determinants that refer to regulatory changes as well as to skills and competencies of companies in sustainability reporting. Our examination shows that the extent of non-financial disclosure related to policies and their outcomes is significantly better than before the implementation of the Directive. Furthermore, we have found that such aspects as the Directive enforcement, company experience in sustainability reporting and company membership in a risky industry are significant determinants of non-financial policy-related disclosure.

In chapter 3, we study both the extent and determinants of non-financial disclosure related to risks and their management. Following the results, it may be stated that the extent of non-financial disclosure related to risks and their management is significantly better than before the implementation of the Directive. Moreover, we have found that such aspects as the Directive implementation, company experience in sustainability reporting and company membership in a risky industry are significant determinants of non-financial risk-related disclosure.

In chapter 4, we examine both the role of primary (investors, creditors, consumers and employees) and secondary (environment, regulators that require mandatory environmental disclosure under the Directive and standard setters) stakeholder groups on the company's environmental disclosure. The findings show that the extent of the environmental disclosure is significantly affected by the demands of stakeholder groups. Among primary stakeholder groups, only customers exert a strong influence on environmental disclosure. As for secondary stakeholder groups, the environment, regulators and standard setters all greatly influence environmental disclosure practices.

In chapter 5, we investigate the role of primary (investors, creditors, consumers and employees) and secondary (environment, regulators that require mandatory environmental disclosure under the Directive and standard setters) stakeholder groups on the company's employee-related disclosure. We have documented that the extent of the employee-related disclosure is significantly affected by the demands of stakeholder groups. Among primary stakeholder groups, only customers exert a strong influence on employee-related disclosure. As for secondary stakeholder groups, the environment, regulators and standard setters all greatly influence employee-related disclosure practices.

In chapter 6, we explore human rights reporting practices by looking at both the extent of disclosure and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory disclosure under the Directive. According to the results, the Directive enforcement is associated with the extent of human rights disclosure. Furthermore, inclusion in the Respect Index is positively related to human rights reporting, while the UN Global Compact participation did not turn out to influence on human rights reporting.

In chapter 7, we examine anti-corruption reporting practices by looking at both the extent of disclosure and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory disclosure under the Directive. Our examination shows that the Directive enforcement has significantly increased the extent of anti-corruption disclosure. Surprisingly, such aspects as inclusion in the Respect Index, government ownership and foreign ownership are not significant determinants of anti-corruption reporting.

In chapter 8, we investigate corporate community involvement disclosures by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory CCID under the Directive. The results show that the Directive enforcement is associated with the extent of corporate community involvement disclosure. However, the study has found no significant support for the relationship between community pressure and corporate community involvement disclosure.

In chapter 9, we investigate whether making non-financial disclosures obligatory affects their materiality. According to the results, the materiality of non-financial disclosure has increased over the years under analysis. Moreover, the implementation of the Directive has positively influenced the materiality of non-financial information.

In chapter 10, we examine the differences in the reliability of non-financial disclosure over the period surrounding the implementation of the Directive. We have documented that the reliability of non-financial disclosure has significantly increased over the years under analysis. Furthermore, the implementation of the Directive has positively influenced the reliability of non-financial information.

3. Innovation in the subject

Overall, this research monograph contributes to the ongoing debate on the effects of mandatory ESG regulations (such as the NFRD) on non-financial reporting and the influence of the Directive on promoting sustainable development.

More specifically, this book contributes to the sustainability accounting literature in several different ways. It enriches the literature on non-financial reporting by providing self-constructed non-financial disclosure indexes based on the requirements of the Directive. It contributes to the understanding of the role of the Directive and other relevant variables in non-financial disclosure related to business model, key performance indicators, policies and their outcomes, risks and their management, environmental and employee disclosure, human rights and anti-corruption disclosure as well as community involvement disclosure. In particular, it contributes to the understanding of the role of secondary stakeholders in environmental and employee-related disclosure. It also presents the role of accounting as an impetus for companies to diminish their detrimental social consequences and the contribution of accounting to the struggle against corruption. Additionally, it depicts the role of accounting in promoting human rights and effective enforcement of corporate responsibility for respecting human rights. Thus, it expands knowledge about three specific subsets of non-financial reporting, namely community involvement disclosure, anti-corruption disclosure and human rights disclosure. Furthermore, it sheds new light on the matters of strategic sustainability in business model disclosure and the corresponding non-financial KPIs, which, to the best of our knowledge, have not been investigated before. Moreover, it provides novel evidence about non-financial risk-related disclosure that has been scarcely examined so far. It also contributes to the understanding of the impact of the Directive on the materiality and reliability of those disclosures. It has important implications for policymakers, as it reveals that companies have responded positively to the regulator's pressure by increasing non-financial disclosure in all studied content items and across all thematic aspects. It also reveals that mandatory regulations form a crucial instrument in improving the materiality and reliability of non-financial disclosure. Our research suggests that, due to the Directive implementation, stakeholders will be provided with more non-financial information that is more material and more reliable. Thus, the quantitative research conducted in the Polish setting confirms the relatively high effectiveness of the Directive in the three-year period from its implementation in terms of the quantity and quality of the required disclosure. Therefore, this study supports the legitimacy theory and its relationship to stakeholders and institutional theories, according to which, public expectations of companies change through the issuance of mandatory regulations for non-financial reporting, and companies are expected to follow "norms" to maintain their legitimacy.

To sum up, the novelty of this publication lies in the following: (1) it disentangles the quantity of non-financial disclosure into five thematic aspects (environment, employees, human rights, anti-corruption and community involvement) and six content items (business model, non-financial KPIs, policies — including due diligence processes implemented and outcomes of these policies, principal risks and managing these risks) and develops individual non-financial indices in the cross-section of these dimensions, taking into account the requirements of the Directive; (2) it focuses on the rarely examined specific subsets of non-financial reporting, for example, anti-corruption, human rights, community involvement and risk-related disclosure; (3) it disaggregates the quality of non-financial disclosure into materiality and reliability and develops self-constructed indices applying the non-financial reporting regime introduced by the Directive and EU Guidelines; (4) it is the first study to test the effectiveness of the Directive, comprehensively taking into account the quantity and quality of disclosures over such a long period of time — three years before and three years after the implementation of the Directive; (5) it explores the relevant determinants of non-financial disclosure, including company characteristics (size, profitability, leverage, industry), corporate governance measures (state ownership, foreign ownership, CSR committee), primary stakeholders (investors, creditors, consumers and employees), secondary stakeholders (environment, regulators, standard setters, e.g., GRI and NFIS), experience in sustainability, stand-alone sustainability reports, external assurance, international presence, public expectations, participation in the UN Global Compact as well as inclusion in the Respect Index.

4. Audience

This monograph is an attempt to contribute to the new but currently dynamically developing direction of basic research in the discipline of "economics and finance" concerning non-financial reporting. The publication has an international reach and is targeted at a wide range of users. The authors recommend this publication primarily to academics around the world, but also to university lecturers, PhD students and other students, as well as persons interested in sustainable development, corporate social responsibility and non-financial disclosure in the broadly understood corporate reporting, hoping that it will prove useful in their scientific work and professional practice.

Due to the range of non-financial issues, the monograph is also addressed to capital market participants, especially investors who make investment decisions and look for material and reliable non-financial information which enables risk assessment. It is also intended for the managerial staff of companies that are subject to the current mandatory regulations as well as those that will be subject to non-financial reporting in the future (from 2024).

By establishing the effectiveness of mandatory regulations on non-financial reporting, the monograph is addressed to legislators aiming to revise their requirements as well as to extend and update them in the future (such as the European Commission). The authors also recommend the monograph to authorities that operate in countries outside Europe and consider the introduction of similar regulations aimed at increasing the ESG disclosure.

5. Compliance with the interests of the Poznań University of Economics and Business and regulations related to the evaluation of scientific activity

Finally, the authors would like to emphasise that this publication is in line with the interest of the Poznań University of Economics and Business (PUEB) and compliant with the regulations related to the evaluation of scientific activity.

First, the research field of ESG reporting in this monograph is part of one of the "Key Research Areas of the Poznań University of Economics and Business for 2022–2024", namely "Sustainable and resilient economy".

Second, it is consistent with its mission and vision, and is corresponding to all three strategic goals of the PUEB Strategy.

With regard to the PUEB mission, the publication is based on the principle of responsibility for the quality of scientific research and may set trends in scientific research related to non-financial reporting.

In line with the PUEB vision, the publication contributes to global economic knowledge on non-financial reporting and contributes to social progress in line with the goals of sustainable development.

This publication implements strategic goal number 1 of the PUEB Strategy "Improving the quality of scientific research and education", as it contributes to acquiring the best possible category (A+ or A) in the evaluation of scientific activity. Firstly, as a research monograph published in the PUEB Press within the scientific discipline of "economics and finance", it scores points under the first evaluation criterion. Secondly, it can win points under the third evaluation criterion, because this publication has a potentially significant social impact. The benefits that can be achieved thanks to it include:

- improving and extending the scope of mandatory regulations on non-financial reporting,
- motivating companies to the actual implementation of processes, measuring and improving performance in the ESG area,
- addressing the expectations of investors by providing more material and reliable ESG disclosures, enabling them to make appropriate risk assessment and strategic investor decisions,
- redirecting financial capital to companies which address key economic and social challenges.

This, in turn, can translate into real social benefits, such as: helping to fight climate change, improving the safety and health of employees, increasing the quality of life of the local community, promotion of human rights and effective enforcement of business responsibility for respecting human rights and struggling against corruption. It should also translate into building a competitive, innovative, climate-neutral, fair and inclusive economy.

This publication aims to achieve goal number 2 of the PUEB Strategy "Enhancing usefulness and attractiveness of PUEB for internal and external stakeholders based on sustainable development goals" by selecting and carrying out research that is compatible with sustainable development of society and the economy.

This publication also meets strategic goal number 3 of the PUEB Strategy "Strengthening international position of PUEB", because it increases the recognition of PUEB's academic staff in the international dimension (abroad).

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Keywords: sustainability accounting, ESG reporting, CSR reporting, non-financial reporting directive, Directive 2014/95/EU.

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Chapter 1

Disclosure of business model and non-financial Key Performance Indicators: The context of NFRD

1.1. Introduction and research questions

Serious environmental and social challenges that our planet faces have resulted in higher expectations for companies to provide clear information about their way of doing business. More than ever, stakeholders are demanding answers to how company business models relate to their value creation and their sustainability matters that reflect their significant impact on the environment and people.

In response to these expectations, the concept of a sustainable business model (SBM) has been developed (Schaltegger, Freund et al., 2012). Lüdeke-Freund (2010) claims that the SBM creates competitive advantage while contributing to sustainable development of our planet.

Schaltegger, Hansen et al. (2016, p. 6) state that "A business model for sustainability helps describing, analysing, managing and communicating (i) a company's sustainable value proposition to its customers and all other stakeholders, (ii) how it creates and delivers value, as well as (iii) how it captures economic value while maintaining or regenerating natural, social and economic capital beyond its organisational boundaries".

According to Redqueen (2021), presenting in a clear and understandable way how the organisation incorporates ESG issues in its strategy and business model is the basis of effective ESG communication. A description of the business model and ESG management system is essential to understand if and to what extent the company is prepared to respond to the risks and opportunities of sustainable development.

Accordingly, the demand for corporate reporting has also changed in terms of its structure and content to meet the challenges of disclosing a company's business model which addresses the sustainability impact that creates or destroys value, as well as relevant metrics (known as key performance indicators

– KPIs) explaining the business model and its consequences for society and the environment.

A growing number of non-mandatory non-financial reporting frameworks encouraged the voluntary disclosure of the business model incorporating sustainability aspects and related KPIs (FRC, 2018; GRI, 2021; IIRC, 2021; SASB, 2017).

Furthermore, Directive 2014/95/EU on disclosure of non-financial and diversity information (European Union, 2014), referred to as the Non-Financial Reporting Directive (NFRD), required European large public interest entities (PIEs) to include in the management report from 2017 disclosures concerning a business model and relevant KPIs which should help to understand the entity's development, performance, position and impact of its activity in relation to sustainability matters.

Due to the Accounting Act (AA, 2016), the Directive has been transposed into Polish law, which has opened up new perspectives for research on the impact of regulatory requirements on business model and KPIs disclosure in the Polish context. As Korca and Costa (2021) argue, the need for a longitudinal analysis that determines the actual impact of the Directive on non-financial disclosures remains. This chapter attempts to answer this call by focusing on the reporting shift from voluntary to mandatory in a six-year period.

While there is interest from professional bodies, standard setters and regulators in the business model and non-financial KPIs disclosure, an academic debate in these fields seems to be still at an early stage (Bini, Giunta et al., 2021; Di Fabio & Avallone, 2018; Zarzycka & Krasodomska, 2022). Therefore, the aim of our study is to explore the effect of Directive 2014/95/EU on the disclosure of sustainability aspects in the description of business models and the quantity and quality of relevant KPIs. To achieve this aim and enrich the debate on business model and non-financial KPIs reporting, this chapter answers the following research questions (RQ):

RQ1: To what extent do Polish listed companies disclose information on the impacts of their business models on key sustainability matters?

RQ2: To what extent do Polish listed companies disclose strategic sustainability-related information that could have an influence on their business models?

RQ3: To what extend do Polish listed companies disclose in their business model descriptions both impacts on and from sustainability aspects?

RQ4: Does the switch from voluntary to mandatory non-financial disclosure enhance the extent of disclosed (in the business model description) strategic sustainability issues affected by and/or influencing a company?

RQ5: To what extent do Polish listed companies disclose "key" non-financial performance indicators that are anchored to a company's business model?

RQ6: What is the quality of the non-financial KPIs disclosed alongside a company's business model?

RQ7: How has the quantity and quality of the non-financial KPIs incorporated in the business model changed after the implementation of the Directive?

This study was carried out in the institutional theoretical framework as a coercive isomorphism can be expected, due to the obligatory nature of Directive 2014/95/EU transposed by Polish regulator into the Accounting Act. It can be assumed that the non-financial disclosure levels will increase as a result of the regulator's pressure.

In this study, to measure the business model and non-financial KPIs disclosure, we have employed the hand-collected data using a series of content analyses. We have also developed a binary disclosure index to assess the quality of the key non-financial indicators. We have used two statistical tests (the Wilcoxon signed-rank and Kruskal-Wallis) to exam the difference between disclosure before and after the implementation of the Directive. The sample covered 426 non-financial reports for 2014–2019 provided by 71 large companies operating in Poland and listed on the Warsaw Stock Exchange (WSE).

Our findings show that despite a significant improvement after the introduction of the Directive, strategic sustainability issues both affected by and influencing a company, are still scarcely disclosed in business model descriptions and communicated by Polish companies. Furthermore, we have found that the percentage of companies disclosing at least one non-financial KPI anchored to the company's business model increased significantly in the period after the introduction of the Directive. We have also documented a general reduction in the average number of non-financial KPIs and a decrease in their overall quality after the implementation of the Directive.

We believe that this chapter contributes to the institutional theory and existing knowledge on corporate non-financial reporting, and responds to the call for a longitudinal analysis that determines the actual impact of the Directive on non-financial disclosures (Korca & Costa, 2021), which might be helpful in developing and continuous updating future non-financial reporting regulations by the EU. We shed new light on strategic sustainability matters in business model disclosure and corresponding non-financial KPIs, which, to the best of our knowledge, has not been investigated before. Finally, the study may have implications for the preparers of non-financial statements and the regulatory bodies developing the non-financial reporting standards at the European level. In the light of the current Directive and its guidelines, preparers need to reconsider their approach to incorporating sustainability (environmental and social) issues in company's business model disclosure and the quantity and quality of non-financial KPIs provided to explain this business model. This can help companies to refine their communication strategies due to the forthcoming changes introduced by the EU's Corporate Sustainability Reporting Directive and its European Sustainability Reporting Standards. In turn, regulatory bodies need to emphasise the importance of linking non-financial KPIs to a company's business model as well as to clarify any ambiguity concerning the companies' obligation to provide both disclosure of how sustainability issues affect the company and how its operations affect the world.

The remainder of this chapter unfolds as follows: the ensuing section presents the institutional background and literature review which refer to the BM and KPIs disclosures. Next, the research methodology is explained. After that the results and discussion are presented. The chapter concludes with a summary of the overall contribution of this part of the work, addressing its limitations and offering future research agenda.

1.2. Institutional background and literature review

Within the accounting field, there has recently been a growing interest from professional bodies, standard setters and regulators in the business model (BM) and non-financial Key Performance Indicators (KPIs) disclosure. Thanks to their actions and support, the disclosure of the BM and KPIs, initially voluntary and later obligatory, has become part of the annual reports of listed companies.

As of 2017, Directive 2014/95/EU requires large public-interest entities to include in their non-financial statements (management reports), inter alia, a brief description of their business model and non-financial KPIs relevant to the particular business. The Directive does not contain any further specification, but it is clear from the context that the information provided should help to understand the company's development, performance, position and impact of its activity with respect to the sustainability aspects.

As Michalak et al. (2017, p. 5) argue, "the description of the business model may be relevant to stakeholders if it helps them to comprehend the company's 'story' and increase understanding of other provided data" (i.e., financial, risk, sustainability data).

EU Guidelines 2017/C215/01 on non-financial reporting issued in 2017 explain that a business model describes how company generates and preserves value through its products or services over the longer term. In short, companies should describe what they do, how and why they do it, i.e., what value and for whom they aim to create. The disclosure should explain the consequences of the model on matters covered in the Directive and vice versa. The Guidelines also offer several recommendations to companies on what business model-related information to disclose. Companies may consider including appropriate disclosures relating to (European Commission, 2017, p. 10): "their business environment, their organisation and structure, the markets where they operate, their objectives and strategies and main trends and factors that may affect their future development". Companies may also consider using KPIs to explain their business model. According to Bini, Bellucci et al. (2018), business model disclosure may increase the effectiveness of non-financial KPIs disclosure.

EU Guidelines 2017/C215/01 describe KPIs as indicator-based disclosures being effective tools to connect qualitative and quantitative information. They can be particularly useful for stakeholders if they are broadly recognised, relevant and of high quality. When designing KPIs, companies are expected to consider their specific business circumstances and the information needs of investors and other stakeholders (European Commission, 2017). However, a big problem arises in the identification of indicators that are relevant to the business (Badawy et al., 2016). This issue is particularly critical for external users who may have difficulty fully understanding whether the non-financial KPIs communicated by the company are really the "key" ones (Holland, 2004). In response to this problem, Bini, Bellucci et al. (2018) proposed the concept of a BM as a valuable tool to assess the company's relevant non-financial KPIs disclosure. The authors present a clearer picture of the value creation process by linking the BM and non-financial KPIs and showing the connections between a company's strategy and the way resources are combined to generate value. BM disclosure should highlight how different resources are combined to achieve outcomes as measured by the appropriate non-financial KPIs. Thus, a BM enables the identification of relevant non-financial KPIs, i.e. indicators that are aligned (consistent) with strategic objectives. According to Holland (2006), linking the company's BM disclosure with the non-financial KPIs disclosure increases the reliability of the information. The description of the BM on the one hand provides an "informative context" — a story that illustrates the connections and relationships between individual components of the BM, and on the other hand, non-financial KPIs provide evidence of the truthfulness of the story over time.

In the light of the above, KPIs have to concern strategic rather than operational or technical levels. Thus, their number will be limited to the really essential ones and crucial for understanding corporate performance. According to the literature (Parmenter, 2020), the fewer KPIs there are, the better performance measurement will be; in fact, many companies will operate very effectively with no more than ten KPIs.

When it comes to the KPIs quality, EU Guidelines 2017/C215/01 highlight several quality characteristics, including understandability and comparability. To make the non-financial disclosure more understandable, companies should provide an appropriate narrative commentary explaining KPIs. They should also explain how the data was collected, how the indicators were calculated and the framework on which they are based. In order to improve comparability of disclosures, companies should use KPIs consistently with time, and should report their past, current and projected values. They may also provide an analysis of the KPIs disclosed (European Commission, 2017). Furthermore, Supplement 2019/C 209/01 on reporting climate-related information to EU Guidelines 2017/C215/01 points to the transparency of the KPIs presentation, indicating that it is good practice to publish an additional table that presents all indicators in one place (European Commission, 2019).

In our study, we explore the Polish setting. In Poland, the Directive was implemented at a minimum level by incorporating its requirements, including disclosures on the business model and KPIs into the Accounting Act (AA, 2016). Further guidance on how to disclose non-financial information, including the business model and KPIs, is provided in *Krajowy Standard Rachunkowości* (National Accounting Standard – NAS) No. 9, issued by the Polish Accounting Standards Committee (NAS 9, 2018). However, as Zarzycka and Krasodomska (2022) noted, "NAS 9 is not widely referred to in corporate practice or in debates around non-financial reporting in Poland".

According to Directive 2014/95/EU, companies may rely on available national, EU-based and international non-financial reporting frameworks to present BMs and KPIs.

The most influential frameworks, such as the International Integrated Reporting Framework issued by the International Integrated Reporting Council (IIRC), sustainability reporting standards offered by the Global Reporting Initiative (GRI), sustainability accounting standards (standards for the disclosure of financially material sustainability information) developed by the Sustainability Accounting Standards Board (SASB) and Guidance on the Strategic Report issued by the UK Financial Reporting Council (FRC), express the need to look more closely at business model disclosure.

The IIRC's definition of "business model" included in Integrated Reporting is: "An organization's business model is its system of transforming inputs, through its business activities, into outputs and outcomes that aims to fulfil the organization's strategic purposes and create value over the short, medium and long term" (IIRC, 2021, p. 41).

The IIRC framework presents a company's business model as the core of the organisation, which draws on various capitals (namely financial, manufactured, intellectual, human, social and relationship as well as natural) as inputs and, through its business activities, converts them to outputs such as products, services, by-products and waste, that affect individual capitals as outcomes. The ability of a business model to adapt to changes (e.g., in availability, quality and affordability of inputs) may affect the operation of the organisation in the long term (IIRC, 2021).

Among the features that can enhance the effectiveness and readability of the description of the business model, the IIRC framework (IIRC, 2021) lists connection to a strategy, risks and opportunities as well as performance (including key performance indicators).

There is no definition of a business model in the GRI Standards (GRI, 2021), although it is one of the determinants of the shape of the entire sustainable report. The reference to the business model can be found in the fragments of the GRI Standards regarding the determining material topics and identifying impacts of the organisation on the economy, environment and people. Firstly, the business model is one of the specific circumstances of the organisation which may affect each of the four steps that the organisation should follow in determining its material topics. Secondly, according to disclosure 2–22, "Statement on sustainable development strategy" in the GRI Standards, "the organisation should describe (…) how its purpose, business strategy and business model aim to prevent negative impacts and achieve positive impacts on the economy, environment and people" (GRI, 2021, p. 74). The GRI standards assume that thanks to this, investors will be able to use the reported information to assess the impact of the organisation and how it integrates sustainable development in its strategy and business model. They will also be able to use this information to identify financial risks and opportunities related to the impact of the organisation and to evaluate its long-term success (GRI, 2021).

SASB Standards also confirm the narrative power of the business model concept, emphasising the role of forward-looking information and its relevance to sustainability accounting. For the purposes of the SASB standards, sustainability accounting reflects the management of a corporation's environmental and social impact. It also includes the impact that sustainability challenges has on innovation, business models and corporate governance and vice versa. The SASB's sustainability-related disclosure is organised under five broad sustainability dimensions: Environment, Social Capital, Human Capital, Business Model and Innovation, and Leadership and Governance. The Business Model and Innovation dimension addresses the impact of sustainability issues on innovation and business models. It addresses the integration of environmental, human and social issues in a company's value-creation process (SASB, 2017).

The *Guidance on the strategic report* of the UK (FRC, 2018) clarifies how companies should present the business model in their annual reports — in the section called the strategic report, which is the UK equivalent of the management commentary. The FRC (2018) indicate that she strategic report should provide shareholders of the company with a holistic and meaningful view of the company's business model, strategy, risks, development, performance, position and future prospects, including relevant non-financial information. The strategic report must therefore include a description of the entity's business model. The FRC (2018) stresses that the business model should provide context for other information presented in the strategic report and the annual report more broadly and should be consistent with the company's strategy. The description of the company's business model should explain how it generates and preserves value over the longer term. Important aspects to consider in describing a business model are how the company captures value and how the entity's business model differs from its competitors. Moreover, information on environmental, employee, social, community and human rights issues should not be considered in isolation but should be taken into account when disclosing the company's strategy and business model, principal risks and uncertainties as well as KPIs.

It should be noted that guidance on the business model disclosure is also included in *Standard Informacji Niefinansowych* (*Non-Financial Information Standard* – NFIS), published to assist Polish companies in complying with the obligations introduced by Directive 2014/95/EU (SEG, 2017). This national framework is widely used in corporate practice by companies listed on the Warsaw Stock Exchange (WSE). NFIS provides guidelines for disclosing the description of the business model and strategic development directions. As part of these disclosures, attention should be paid to the social and environmental consequences of using a given model and adopted strategies, the characteristics of the market in which the company operates, its products and services as well as the specificity of the competitive environment and the supply chain. NFIS offers two material disclosures in this respect, regardless of the industry in which the company operates: (1) description of the adopted development strategy, taking into account social and environmental aspects, (2) characteristics of the adopted business model, including the description of the supply chain, with particular emphasis on the description of the social and environmental impact (SEG, 2017).

Regarding non-financial KPIs, there are several frameworks (e.g., FRC, 2018; IIRC, 2021) that propose their overall approach, including guidance on the qualitative characteristics of such disclosure. For instance, (FRC, 2018) indicates that non-financial KPIs provide insight into future financial prospects and progress in managing risks and opportunities. They should include matters potentially affecting the long-term sustainability of an entity. They may be a mixture of indicators which provide information about what the entity has done in the past and what may happen in the future. Understandability and consistency in the presentation of KPIs are a desirable quality. There should be alignment between the KPIs presented and the key sources of value and risks identified in the business model. The number of KPIs will generally be relatively small because directors use those that are most effective in assessing progress against objectives or strategy.

Other frameworks (CDSB, 2022; EFFAS & DVFA, 2010; GRI, 2021; SASB, 2017; SEG, 2017) include also own sets of KPIs divided into different non-financial categories, often with a unit of measure, example, rationale, alignment with other reporting frameworks and reference to EU policy. For instance, the European Federation of Financial Analysts Societies, in its Guideline for the Integration of ESG into Financial Analysis and Corporate Valuation, developed the KPIs that can be used in financial analysis of corporate performance. The KPIs have been structured according to the ESG dimensions. In addition, the so-called fourth pillar — "long-term viability" (V) — was included to capture those KPIs that represent the concept of sustainability capital markets, associated with socially responsible investment (SRI), green investing or ecological and ethical movements because it represents the company's ability to generate long-term profits without sacrificing assets, skills or resources through short-term exploitation. Within the dimensions E, S, G and V, the guideline defines general KPIs that should be disclosed by all industries, and sector KPIs that should be additionally disclosed to demonstrate the issues relevant to the sector. The guideline also provides essential criteria for useable KPIs with a specific focus on comparability and benchmarkability (EFFAS & DVFA, 2010).

Our research uses institutional theory introduced in the late 1970s by Meyer and Rowan (1977) as its conceptual framework because it serves to explain how organisations try to find some kind of consistency in complying with the overall rules and norms of the institutional environment. According to institutional theory researchers — DiMaggio and Powell (2000) — one of the strategies an organisation can employ to achieve consistency is the coercive process. They claim that organisations adopt changes that are consistent with the larger institution due to pressure from other organisations through which, for example, they may be regulated, such as state legislators. Coercive pressure, therefore, arises when an institution imposes strong pressures such as rules and regulations, sanctions and penalties.

Therefore, the introduction of the Directive has fundamentally changed the institutional environment in which organisations report on sustainable issues. The imposition of new reporting obligations on PIEs, including those relating to the business model and non-financial KPIs disclosure, placed such disclosure in the coercive context. Thus, institutional theory, and especially the coercive mechanism, has become a popular perspective in studies addressing the Directive (Dumitru et al., 2017; Matuszak & Różańska, 2021; Tarquinio et al., 2020; Tiron-Tudor et al., 2019).

Considering the institutional context presented above, we believe that particular attention needs to be paid to the integration of sustainability (environmental and social) issues in the company's business model disclosure and the quantity and quality of non-financial KPIs provided to explain this business model. Furthermore, in order to better understand the corporate response to institutional pressure, there is a need to analyse the real (potential) impact that mandatory regulation (Directive 2014/95/EU) could have on improvements in the above areas of non-financial disclosure. Therefore, we focus on the role that the Directive has had on embedding sustainability aspects in business model descriptions as well as the quantity and quality of relevant KPIs disclosed by Polish companies. Hence, we assess the reporting path both before and after the administrative reform introduced by Directive 2014/95/EU.

Regarding the impact of the Directive on non-financial disclosure, few studies have looked at the differences in non-financial disclosure between the years prior to (2015 or 2016) and the year after (2017) the regulation (Caputo et al., 2020; Cordazzo et al., 2020; Matuszak & Różańska, 2021; Mion & Loza Adaui, 2019; Sierra-Garcia et al., 2018), or assessed how non-financial disclosure changed two years after the implementation of the Directive (2017 and 2018) compared to the year (2016) preceding its entry into force (Tarquinio et al., 2020). Nonetheless, as Korca and Costa (2021) argue, the need for a longitudinal analysis remains. They indicate that more time is needed for the regulation to mature and potentially lead to change. Therefore, the assessment of changes resulting from early compliance with the Directive (the migration from voluntary to mandatory disclosure requirements) is insufficient to analyse the actual impact that a mandatory requirement may have on companies' non-financial disclosures.

The authors of this book support the idea of reinforcing the analysis with a longitudinal approach that focuses on the reporting shift from voluntary to mandatory over a six-year period. This chapter addresses this challenge by focusing on business model and non-financial KPIs disclosure.

Despite the interest from professional bodies, standard setters and regulators in the business model and KPIs disclosure, the academic debate in the field of non-financial reporting seems to be still at an early stage.

With reference to research focusing on the disclosure of the BM, studies have mainly investigated the extent (Giunta et al., 2014; Kawacki, 2020; Michalak, 2015) and quality (Bagnoli & Redigolo, 2016; Melloni et al., 2016) of disclosures utilising content analysis with either the focus on integrated reporting (Bek-Gaik & Surowiec, 2019; Sukhari & Villiers, 2019) or restricting the scope to intellectual capital (Bini, Dainelli et al., 2016) or sustainability (Bini, Bellucci et al., 2018; Morioka et al., 2016; Ritala et al., 2018).

It should be noted that a significant part of prior studies on business model disclosure has been conducted through the lens of the International Integrated Reporting Framework proposed by the IIRC, raising the problem of the compliance of BM disclosures with the IIRC framework or examining the impact of the IIRC framework on the quantity and quality of disclosed information on the

BM. For example, Melloni et al. (2016) analyse all the integrated reports providing a description of the BM available in the IIRC database in 2014. The content analysis reveals that the dominant elements of the business model descriptions are outcomes, and less information is disclosed on inputs, business activities and outputs. The findings show that the majority of BM disclosures have a positive tone. Moreover, the study has demonstrated that companies disclose little forward-looking information, and the amount of information embedding quantitative indicators is limited. The authors of the study concluded that managers use BM disclosure in the Integrated Reports as an impression management strategy.

Further, Sukhari and Villiers (2019) analyse the change in BM and strategy disclosures after the introduction of an integrated reporting requirement in South Africa, showing an improvement in these disclosures. In particular, they proved that after implementing the requirement to publish an integrated report companies disclose their strategic goals more transparently, but still do not link these goals to business models, KPIs, risks or opportunities.

Another study on business model disclosure refer to the Guidance on the Strategic Report of the UK FRC. Specifically, Bini, Dainelli et al. (2016) examined BM disclosure presented in the Strategic Report by British high-tech companies listed on the stock exchange and found that few companies use their BM disclosure to highlight the contribution of their intellectual capital to create and capture value. Moreover, BM descriptions poorly illustrate the interactions among the BM elements which help understand how intellectual capital is entangled in the company's value creation process.

Among empirical papers dealing with the sustainability aspects in BM disclosure, Bini, Bellucci et al. (2018) focused on the UK mining industry and assessed companies' commitment to sustainability by performing content analyses of their business model disclosures. Their analysis allows to determine the extent to which mining companies engage in sustainability and highlight areas where the approach to sustainability should be enhanced. Further, Ritala et al. (2018) examined the variety of sustainable business models adopted by the largest global corporations — those listed in the S&P 500 index — in 2005–2014. They have found evidence of the growing importance of different types of sustainable business models over time. In particular, their results show that companies have mostly adopted environmentally-oriented archetypes, and to a much lesser extent the social and organisational ones.

Nevertheless, to date, a limited number of studies (Caputo et al., 2020; Cordazzo et al., 2020) have examined business model disclosure provided by large companies located in the EU before and after the implementation of the Directive. However, these studies are limited to considering only the presence or absence of a business model description when calculating the total non-financial disclosure index. Thus, we cannot learn how the Directive transposition has influenced reporting on the business model in EU countries.

The literature review showed that also few studies have investigated the KPI disclosure, and even fewer have specifically focused on non-financial KPIs. So far, researchers have paid particular attention to the quantity and quality of KPIs provided, and shed some light on the determinants of these disclosures.

Bradley and Botchway (2018) focused on the use of KPIs in the coffee industry and documented that indicators correspond to the sustainability challenges identified in the literature. They also found a considerable variance in the non-financial KPIs disclosed, which highlights the discretionary nature of sustainability reporting.

Bini, Dainelli, Giunta et al. (2019) explored the non-financial KPIs provided by UK listed companies in their strategic reports and found that a significant proportion of companies fail to report any non-financial KPIs, and that only half of the indicators disclosed can be described as key or linked to value creation in the BM.

Bayne and Wee (2019) investigated non-financial KPIs disclosure of Australian listed companies. They found that companies report, on average, 11 non-financial KPIs, the most common types of which are those related to employees and the environment. The comparability of non-financial KPIs over time and with competitors score is low. Similarly, Zarzycka and Krasodomska (2022) indicate that large public interest entities operating in Poland provide a variety of non-financial KPIs in a manner that makes their effective comparison difficult.

The scarce studies that focus on KPIs disclosures confirm that various factors determine the quality of presented KPIs, namely: the company size (Bayne & Wee, 2019), industry, ecologists, reporting standard (Zarzycka & Krasodomska, 2022), quality of the board of directors, and especially experience in financial key roles, intangible intensity, leverage and profitability (Bini, Giunta et al., 2021).

There are also several studies (Loprevite et al., 2020; Raucci & Tarquinio, 2020) that have analysed the impact of Directive 2014/95/EU on disclosure of the GRI sustainability indices by Italian listed companies. All of them confirm the existence of a generalised reduction in the use of sustainability indices in the first year of transition to the mandatory regime and have come to the common conclusion that companies seem to focus only on indicators considered more "relevant" according to the Directive. However, these studies focused on all indicators included in a complete GRI content index template, and thus cannot be regarded as really "key" and anchored to a company's business model.

The conducted literature review allowed for the conclusion that the research so far has not managed to explain the potential role of the Directive in improving the reporting of the business model and the corresponding non-financial KPIs.

Thus, the aim of our study is to examine the impact of Directive 2014/95/EU on the disclosure of sustainability aspects in the description of business models and the quantity and quality of relevant KPIs.

More specifically, we examine strategic sustainability issues affected by or influencing a company disclosed in the business model (BM) description as well as disclosed non-financial KPIs to explain (measure) them across companies listed on the Warsaw Stock Exchange over the period surrounding the implementation of Directive 2014/95/EU (the Directive).

1.3. Research methodology

1.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning the BM and KPIs disclosure were hand-collected from non-financial reports (management commentaries or separate stand-alone reports). We have analysed the sections dedicated to BM disclosure and specific sections discussing KPIs disclosures that directly or indirectly linked to the sections devoted to the BM. In order to answer research questions, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

1.3.2. Method of analysis

To assess BM and non-financial KPIs disclosure in management commentaries and separate stand-alone reports, we performed a series of content analyses. Content analysis is a legitimate method of collecting data that has been increasingly used in business research to examine corporate disclosures (Bryman & Bell, 2015; Guthrie, 2014).

First, we investigated disclosure practices concerning the BM. Consistent with the BM description proposed by the Directive, our coding framework includes two components. We analysed whether a given company explained in a given year:

1. How its business model (and strategy) might (adversely) impact the sustainability aspects (BM impact on sustainability aspects).
2. How the sustainability aspects might affect its business model (and strategy) (impact on BM from the sustainability aspects).

Sustainability aspects relate to one of five thematic aspects (consistent with those proposed by the Directive), namely: environment, labour practices, human rights, community involvement and anti-corruption.

Since the coding procedure did not aim to assess the BM disclosure quality but rather to identify a description of the company's impact on sustainability and vice versa, our analysis was centred on information that referred to one or more of the five sustainability thematic aspects listed above. Thus, if the presence of such a description was observed, irrespective of the number of thematic aspects it referred to, we scored one (and zero otherwise).

Moreover, we checked whether the description of how sustainability aspects might affect a company's business model is supported by financial amounts.

Second, we investigated disclosure practices concerning non-financial KPIs. In our study, to determine the non-financial KPIs that are really "key", we have used the approach to content analysis proposed by Bini, Dainelli, Giunta et al. (2019). Thus, we have searched for non-financial KPIs disclosures, which are anchored to the value drivers that underlie a company's BM (that is, KPIs that illustrate, in quantitative terms, the value drivers that characterise the BM of a company). For those companies that have disclosed such KPIs, we have checked the extent and the quality aspects of the disclosure. In terms of the extent, we have counted the number of KPIs and grouped them into three main areas: environmental, employee and social matters. A simple binary (0,1) coding scheme was used to determine the presence or absence of items in each category.

As to the quality of non-financial KPIs we have developed and calculated a non-financial KPIs disclosure index (Non-financial KPIs Index) that covers eight aspects of quality, such as the provision of the (1) narrative commentary, (2) method of measurement, (3) unit of measurement, (4) actual values, (5) past values (6) projected values, (7) existence of KPI analysis, (8) transparency of presentation (graphics, tables, schemes). The above-mentioned aspects are based mainly on recommendations included in the EC guidelines (European Commission, 2017, 2019) and the desirable qualities of KPIs suggested by the literature (Bayne & Wee, 2019; Bradley & Botchway, 2018; European Commission, 2017; Zarzycka & Krasodomska, 2022).

Each quality aspect is assigned the same significance, and if it is present, it receives a value of "1", and if it is not available the value is "0". The index is calculated as the ratio of the sum of points assigned for each quality aspect mentioned in the reports to the total points available, which equal 8.

In order to decrease the subjectivity of this evaluation, we have employed cross-check analysis (scores given by one author were checked independently by the other author and conversely). Discrepancies among the members of the research team were discussed and reconciled.

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test when the participants were the same in each group and the Kruskal-Wallis test when the groups were not the same.

1.4. Empirical results and discussion

In this section, we present the results of the assessment of business model and non-financial KPIs disclosures, from a changing institutional perspective. Our analysis starts by investigating sustainability matters that are embedded in the BM description and the role of the Directive's regulations in reporting key sustainability matters both affected by and influencing a reporting entity.

Table 1.1 shows that the majority of companies have explained how their business models (and strategies) might (adversely) affect the sustainability aspects. Only 32.4% of examined companies disclosed at least one impact on the sustainability aspects in 2014–2016. The situation improved in 2017–2019 (63.8%). The test revealed that the difference between the analysed periods (97%) is statistically significant. Among the 213 company-year observations we have analysed, the number of companies which did explain how the sustainability aspects might affect their business models (and strategies) in the periods before and after the implementation of the Directive amounted to only 1 and 3 respectively. According to the test, the observed mean change (200%) is not statistically significant. It is also worth pointing out that almost none of the companies provided financial estimates concerning the disclosed sustainability impacts. This may indicate that such quantification is very difficult for companies at the strategic level.

In terms of the impacts in both directions, they are communicated only by 3 disclosing companies in 2014–2016 and in and 15 disclosing companies

Table 1.1. Comparison of the impacts on and of the sustainability aspects reported in the business model before and after Directive implementation (2014–2016 versus 2017–2019)

Period	Company-year observations	Number (share) of company-year observations that disclose impact on BM of sustainability aspects		Number (share) of company-year observations that disclose BM impact on key sustainability aspects		Number (share) of company-year observations that disclose in BM both impacts (on and of) sustainability aspects		Company-year observations having impact on BM of sustainability aspects		Company-year observations having BM impact on key sustainability aspects		Company-year observations having both impacts (on and of) sustainability aspects	
								Mean	CV	Mean	CV	Mean	CV
Before implementation (2014–2016)	213	4	(1.9%)	72	(33.8%)	3	(1.4%)	0.02	725	0.34	140	0.01	839
After implementation (2017–2019)	213	18	(8.5%)	151	(70.9%)	15	(7%)	0.08	330	0.71	64	0.07	364
Change		14	(350%)	79	(109.7%)	12	(400%)	350%		110%		400%	
Z								2.61		6.34		2.48	
p								0.01		0.00		0.01	

CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean multiplied by 100%; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

in 2017–2019. The mean change (400%) in this case is statistically significant. However, the results indicate that in 2017–2019 the vast majority of companies did not seem to fully comply with the Directive, which specifically requires companies to explain the consequences of their activity illustrated in the business model on the sustainability matters and vice versa.

Next, we analysed and compared the disclosure practices concerning non-financial KPIs before and after implementation of the Directive.

Table 1.2. Comparison of companies disclosing non-financial KPIs before and after the implementation of the Directive (2014–2016 versus 2017–2019)

Period	Number of companies	Company-year observations	Number (share) of company-year observations where non-financial KPIs were disclosed		Number (share) of companies disclosing non-financial KPIs		Company-year observations disclosing non-financial KPIs	
							Mean	CV
Before implementation (2014–2016)	71	213	10	(4.7%)	5	(7%)	0.05	452
After implementation (2017–2019)	71	213	62	(29.1%)	25	(35.2%)	0.29	156
Change			52	(520%)	20	(400%)	520%	
Z							5.7	
P							0.00	

CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean multiplied by 100%; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

Table 1.2 shows that many of the reports under investigation did not include any non-financial KPIs. Only 4.7% of the examined company-year observations disclosed at least one non-financial KPI in 2014–2016. This percentage increased to 29.1% in 2017–2019. The results indicate that the change between the clustered years (520%) is statistically significant (p-value < 0.001). Moreover, there is an increase in the number of companies disclosing non-financial KPIs from 5 before implementation to 25 after the implementation of the Directive. Statistical tests confirm the significance of this difference (400%). On average, the number of non-financial KPIs included in each report having at least one non-financial KPI was 13.4 in 2014–2016 and 6.9 in 2017–2019 (Table 1.3). The tests reveal that this difference is statistically significant. This result confirms the previous studies (Loprevite et al., 2020; Raucci & Tarquinio, 2020; Tarquinio et al., 2020) that found a negative trend among companies in providing sustainability indices after the Directive implementation. Among the non-financial KPIs before the implementation of the Directive, environmental and social measures were the most frequent. The situation changed after the implementation of the Directive since companies provided indicators related to employee and other social issues more often. Overall, our findings suggest that non-financial KPI disclosures provided by the companies examined are not common compared to disclosures such as policies, outcomes and risks presented in the subsequent chapters.

Table 1.3. Comparison of disclosure practices concerning average number of non-financial KPIs before and after Directive implementation (2014–2016 versus 2017–2019)

Period	Company-year observations	Average number of non-financial KPIs disclosed		Average number of environmental KPIs disclosed		Average number of employee KPIs disclosed		Average number of social KPIs disclosed	
		Mean	CV	Mean	CV	Mean	CV	Mean	CV
Before implementation (2014–2016)	10	13.4	47.5	6.4	14.0	4.0	40.8	6.2	41.5
After implementation (2017–2019)	62	6.9	63.2	1.7	56.1	2.2	71.4	4.4	70.3
Change (%)		–48		–73		–46		–29	
KW (H)		9.7		14.5		9.9		4.3	
p		0.00		0.00		0.00		0.04	

CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean multiplied by 100%; KW (H) – Kruskal-Walis test statistics; *p* – *p*-value.

Source: Own elaboration.

In order to answer the last two research questions, we compare the mean of the non-financial KPIs disclosure quality index and all its components only for those companies that reported KPI before and after the implementation of the Directive, i.e., 10 and 62 companies respectively (Table 1.4). The results based on the Kruskal-Wallis test indicate that in each case (except for the analysis of the KPI component) the mean quality decreased between the clustered years, but this change is not statistically significant (p-value > 0.1). The drop down of the quality of non-financial KPIs reported can be explained by an increase in the number of companies starting to report the non-financial KPI after the implementation of the Directive (from 10 to 62 companies). The new companies did not have much experience in such disclosures, which affected the quality negatively.

Table 1.4. Comparison of mean non-financial KPIs disclosure quality index and all its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	Company-year observations	Non-financial KPIs Index		Narrative commentary		Method of measurement		Unit of measurement		Actual values		Past values		Projected values		Analysis of KPIs		Transparency	
		Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV
Before implementation (2014–2016)	10	0.7	11.8	1.0	0.0	0.8	52.7	0.9	35.1	1.0	0.0	0.6	86.1	0.3	161.0	0.1	316.2	1.0	0.0
After implementation (2017–2019)	62	0.6	44.0	0.8	46.8	0.6	77.4	0.8	57.0	0.8	46.8	0.6	85.7	0.1	244.7	0.2	195.7	0.9	41.5
Change (%)		–15		–18		–21		–16		–18		–3		–52		110		–15	
KW (H)		1.3		2.1		1.1		1.0		2.07		0.01		1.47		0.65		1.64	
p		0.3		0.2		0.3		0.3		0.15		0.91		0.23		0.42		0.20	

CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean multiplied by 100%; KW (H) – Kruskal-Walis test statistics; *p* – *p*-value.

Source: Own elaboration.

1.5. Conclusions, limitations and future research agenda

This chapter investigates the disclosure in the business model of strategic sustainability issues affected by or influencing a company and the non-financial KPIs used to explain them, looking at both the quantity and quality of these indicators. In particular, we have examined the potential role of the Directive in improving the reporting of both impact perspectives in business models as well as related relevant non-financial KPIs.

The examination indeed showed that the disclosure of both impact perspectives improved significantly after the Directive implementation, however, the strategic sustainability issues both affected by and influencing a company, are still scarcely disclosed in business model descriptions among the examined Polish companies. When it comes to the non-financial KPIs, we have found that the number of companies disclosing at least one non-financial KPI linked to the company's business model increased significantly after the Directive implementation. We have also documented a general reduction in the average number of non-financial KPIs and a decrease of their overall quality after the implementation of the Directive.

Hence, these findings support the institutional theory by providing empirical evidence of how companies responded to the regulatory pressure and provided strategic non-financial disclosure.

The study contributes to the sustainability accounting literature in several different ways. First, we focus on the Polish setting, which is, as Zarzycka and Krasodomska (2022) believe, interesting and relatively unexplored.

Second, we focus solely on strategic disclosures, such as the business model and the corresponding non-financial KPIs, which rarely come up in academic debate. Most of the previous studies aimed at investigating the total non-financial disclosure index, the calculation of which took into account the description of the business model and the provision of KPIs.

Third, we add to our analysis two unexploited elements of business model disclosure related to information necessary to understand how companies are affected by sustainability issues and information necessary to understand the company's impact on people and the environment.

Fourth, we explore really "key" non-financial performance indicators that are anchored to a company's business model, while few studies that have focused on KPIs disclosures before have investigated the indicators, which are called KPIs in the reports, irrespective of their relevance for the corporate strategy and business model.

Fifth, we respond to the call for a longitudinal analysis that determines the actual impact of the Directive on non-financial disclosures (Korca & Costa,

2021) and we focus on the reporting shift from voluntary to mandatory in a six-year period.

Sixth, to the best of our knowledge, research to date has not clarified the potential role of the Directive in improving non-financial disclosures related to the business model and relevant KPIs.

Finally, the study may have implications for the preparers of non-financial statements and regulatory bodies updating future non-financial reporting regulations and developing new standards. In the light of the current Directive and its guidelines, preparers need to reconsider their approach to incorporating the sustainability issues (environmental and social) in the company's business model disclosure. They also need to ensure that the company's non-financial KPIs disclosure mirrors its business model and consider the guidelines that suggest how they should be disclosed. This can help companies better prepare for the upcoming changes introduced by the EU Corporate Sustainability Reporting Directive and European Sustainability Reporting Standards.

In turn, regulatory bodies need to develop detailed standards that could support companies in improving their disclosure practices. These standards should emphasise the importance of linking non-financial KPIs to a company's business model as well as to clarify any ambiguity concerning the companies' obligation to provide both disclosure of how sustainability issues affect the company and how its operations affect the world. In this way, regulations could cause changes in reporting practices, and the activities of companies would contribute to a sustainable global economy.

Given the exploratory nature of our study, it is not without limitations. One of them is the sample size that is reduced to Polish large companies. Future research could examine companies from other countries and enable generalisation of the study results. Our findings show that many Polish companies do not disclose any KPIs and do not explain how sustainability aspects might affect their business models. Many assumptions can be made to explain these results. Therefore, detailed studies may be useful to shed light on the determinants of this disclosure.

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Chapter 2

Disclosure of non-financial policies and their outcomes: The determinants and impact of NFRD

2.1. Introduction and research questions

Over the last few decades, non-financial disclosure has attracted the attention of both academics and practitioners, leading companies to make significant changes to several key areas of corporate reporting. Responding to the challenges of sustainable development, many companies have put together and disclosed non-financial policies that set out how companies handle their responsibility towards the environment and social matters.

Recent regulatory changes in non-financial reporting, such as the one related to in the European Union Directive on non-financial disclosure (European Union, 2014), referred to as the Non-Financial Reporting Directive (NFRD), emphasise the importance of extending the disclosure of environmental and social policies within corporate reporting. Given such institutional pressure, it is likely to lead to radical changes in reporting practices and will require a careful assessment of the previous and present state of non-financial policies disclosed by companies.

Erkens et al. (2015), based on a bibliometric analysis of academic articles published on the topic of non-financial information over the timespan of 1973–2013, suggested that one of the most interesting areas for future research on non-financial disclosure is the analysis of the determinants and consequences after the adoption of major regulation changes. The rationale behind this is that new regulations on mandatory disclosure can be considered as "natural experiments" that can test agents' reactions and facilitate the interpretation of a causal relation.

The introduction of Directive 2014/95/EU (the Directive) stimulates research on its impact on disclosed non-financial policies, but an in-depth analysis of this issue requires taking into account both the periods before and after its introduction. Studies that assessed the state of the art of non-financial reporting before the implementation of the Directive (Hoffmann et al., 2018; Manes-Rossi et al., 2018; Matuszak & Różańska, 2017; Venturelli et al., 2017) showed that there was an information gap regarding some of the aspects required by the Directive. However, the information gap varied from country to country. As noted by Matuszak and Różańska (2017), there was a low level of pre-implementation compliance with the Directive requirements on non-financial disclosure, especially in Poland. In this case, the potential contribution of the Directive to narrow the non-financial information gap seems to be significant.

Nevertheless, to date, a limited number of studies (Cordazzo et al., 2020; Mio et al., 2020; Sierra-Garcia et al., 2018) have examined non-financial policies and/or their results provided by large companies located in the EU before and after the implementation of the Directive to learn how this regulation transposition has influenced reporting on non-financial policies in EU countries. Moreover, prior studies (Sierra-Garcia et al., 2018) do not provide a complete picture of the changes in non-financial policies and their outcomes required by the Directive, and studies determining whether the Directive affected the level of non-financial disclosure (Cordazzo et al., 2020; Mio et al., 2020) also show conflicting results. The inconclusive results may be due to the fact that the extent of non-financial disclosure may depend on the acquired knowledge and skills of companies in the field of non-financial reporting (Doni et al., 2020). The findings so far cannot be generalised as the research considers only 1 year in the voluntary disclosure context and 1 year in the mandatory one.

To address this gap, this chapter focuses specifically on the non-financial policies disclosure as required by the Directive for listed Polish companies and aims to analyse both the extent of non-financial policy disclosure and its determinants related to regulatory changes as well as skills and competencies of companies in sustainability reporting.

This study mainly addresses three research questions (RQ):

RQ1: To what extent do Polish listed companies disclose their non-financial policies?

RQ2: Does the switch from voluntary to mandatory non-financial disclosure enhance the extent of non-financial policies disclosed?

RQ3: What are the main variables related not only to regulatory changes but also to corporate sustainability reporting skills and competences that influence non-financial policy disclosure?

In order to answer the above research questions, in the first stage the authors employed content analysis and a self-constructed index to measure the extent of non-financial policy disclosure. A description of the policies pursued by the undertaking and the outcome of those policies were assessed across the five non-financial thematic aspects required by the Directive, namely: environment, labour practices, human rights, community involvement and anti-corruption. In the second stage, the authors used the Wilcoxon signed-rank test to examine the difference between disclosure before and after the implementation of the Directive and the econometric model to test the relationship between the extent of policy disclosure and other relevant variables. The research has been carried out in the fiscal years of 2014–2019 and covered a sample of 71 companies listed on the Warsaw Stock Exchange (WSE) subject to the Directive transposed into the Polish Accounting Act (AA, 2016).

The results, better explained in the section "Results and discussion", show that the extent of non-financial policy disclosure in Polish companies is significantly better than before the introduction of the Directive. Furthermore, we found that the extent of non-financial policy disclosure is significantly influenced not only by the Directive implementation but also by the company experience in sustainability reporting and the company membership in a risky industry.

This research is a preliminary analysis of non-financial policy-related disclosure required by the Directive and has several original points with respect to other studies on the policy disclosure issue. The chapter contributes to filling a relevant gap in the literature related to the insufficient investigation of the disclosure of non-financial policies. In doing so, first, it enriches the literature on non-financial disclosure by employing content analysis and providing a non-financial policy disclosure index based on the requirements of the Directive. Second, it provides empirical evidence of the extent of non-financial policy disclosure in the Polish setting over the period of 6 years. Furthermore, it is the first research study investigating the determinants of non-financial policy disclosure in the voluntary and mandatory context (the Polish one) before and after the adoption of the Directive.

The remainder of the chapter is as follows: Section 2.2 presents the normative background and literature review, Section 2.3 outlines the research methodology used, Section 2.4 offers the results and discussion, and Section 2.5 presents the main conclusions.

2.2. Institutional background and previous literature

Responding to the challenges of sustainable development, many companies have put together and disclosed non-financial policies that set out how companies handle their responsibility towards the environment and social matters. The problem is that non-financial policies are not yet properly included in corporate reporting, because while many European companies (albeit still a minority) disclose fairly detailed policies, significantly fewer businesses provide information which is necessary to understand their situation and future development (Alliance for Corporate Transparency, 2019).

Recent regulatory changes in non-financial reporting, such as the one related to as the NFRD, emphasise the importance of extending the disclosure of environmental and social policies within corporate reporting. Article 19a (1) of the Directive states as follows:

> Large undertakings (…) shall include in the management report a non-financial statement containing information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including (…) a description of the policies pursued by the undertaking in relation to those matters, including due diligence processes implemented; the outcome of those policies (…). (European Union, 2014)

The subsequent EU Guidelines 2017/C215/01 on non-financial reporting issued in 2017 (European Commission, 2017) and Supplement 2019/C 209/01 to the guidelines on reporting climate-related information (European Commission, 2019) provide the methodology for reporting on the policies in question (including policies addressing climate-related topics) and the outcomes of those policies. The EU Guidelines and the Supplement encourage companies, among others, to disclose information on their approaches to key non-financial aspects, main objectives, and how they are planning to deliver on those objectives and implementing those plans. The outcome analysis should include relevant non-financial key performance indicators (KPIs). There may be times when the company has not developed policies that cover certain matters that it still deems important. The company should then provide a clear and reasoned explanation as to why it has not developed these policies.

In Poland, the Directive was transposed into the Polish Accounting Act, which has been applied since the fiscal year 2017. The PAA also requires disclosing a description of the policies pursued by the undertaking in relation to social, employee and environmental matters, respect for human rights, anti-corruption and bribery matters, as well as the outcome of those policies.

In fact, the Directive does not specify a detailed way on how to report and disclose non-financial information, as well as policy, but it provides that companies may rely on national, Union-based or international frameworks. Among the existing reporting frameworks, it refers to the GRI Standards that require companies to provide policies for each material topic. The scope of these topics includes, among other things, the economic ones: procurement practices, anti-corruption, tax; the environmental ones: materials, energy, water and effluents, biodiversity, emissions and waste; the social ones: employment, labour/management relations, occupational health and safety, diversity and equal opportunity, non-discrimination, freedom of association and collective bargaining, child labour, forced or compulsory labour, security practices, rights of indigenous peoples, human rights, local communities, public policy, customer health and safety, marketing and labelling, customer privacy (GRI, 2020).

Furthermore, in order to assist Polish listed companies in complying with the obligation to disclose non-financial information, the Non-Financial Information Standard (NFIS) was issued in 2017. NFIS is a voluntary regulation whose development was coordinated by the Reporting Standards Foundation and the Association of Stock Exchange Issuers, which has been accepted and supported by a number of institutions and organisations. NFIS enables Polish companies to fulfil their reporting obligations for non-financial information that was created pursuant to Directive 2014/95/EU. NFIS draws attention to the importance of measures and their selection from the point of view of capital markets, which by definition are to make it possible to determine to what extent the company's goals and plans are being implemented in three areas: management, environmental, social and employee (SEG, 2017).

Given such institutional pressure, the corporate response to providing disclosure of non-financial policies and their outcomes calls for attention and thorough examination. Neo-institutional theory covers both institutional and market pressures, and explains why companies may vary in their response to regulations or even to the best practices among their competitors (Aguilera & Jackson, 2003). Building on this theory, the rational logic behind providing non-financial policy information mandatorily and/or voluntarily derives from different levels of pressure from regulations and/or best practices, encouraging companies to respond in order to meet social norms and be acceptable.

Erkens et al. (2015), based on a bibliometric analysis of academic articles published on the topic of non-financial information over the timespan of 1973–2013, suggested that one of the most interesting areas for future research on non-financial disclosure is the analysis of the determinants and consequences after the adoption of major regulation changes. The rationale behind this is that new regulations on mandatory disclosure can be considered as "natural experiments" that can test agents' reactions and facilitate the interpretation of a causal relation.

The introduction of the Directive stimulates research on its impact on disclosed non-financial policies, but an in-depth analysis of this issue requires taking into account both the periods before and after its introduction. Studies that assessed the state of the art of non-financial reporting before the implementation of the Directive (Hoffmann et al., 2018; Manes-Rossi et al., 2018; Matuszak & Różańska, 2017; Venturelli et al., 2017) showed that there was an information gap regarding some of the aspects required by the Directive. However, the information gap varied from country to country. As noted by Matuszak and Różańska (2017), there was a low level of pre-implementation compliance with the Directive requirements on non-financial disclosure, especially in Poland. The low level of compliance with the Directive among Polish listed companies was also confirmed by the studies conducted by Dyduch and Krasodomska (2017) and Szadziewska et al. (2018). In this case, the potential contribution of the Directive to narrow the non-financial information gap seems to be significant.

Nevertheless, to date, a limited number of studies (Cordazzo et al., 2020; García-Benau et al., 2022; Mio et al., 2020; Sierra-Garcia et al., 2018) have examined non-financial policies and/or their results provided by large companies located in the EU before and after the implementation of the Directive to learn how the Directive transposition has influenced reporting on non-financial policies in EU countries.

A relevant exception in this regard is one study (Sierra-Garcia et al., 2018) which focused on Spanish IBEX-35 listed companies. However, the study is fragmentary as the authors limited it to comparing one element of the content, namely KPIs, and this does not provide a complete picture of the changes in non-financial policies and their outcomes required by the Directive.

Subsequent studies (Cordazzo et al., 2020; Mio et al., 2020) that use content analysis and disclosure indexes and consider 1 year in the voluntary disclosure context and 1 year in the mandatory one to determine whether the Directive affected the level of non-financial disclosure, show conflicting results.

Mio et al. (2020) have tested the extent of non-financial disclosure in terms of risk, policy and outcome relying on reports of 253 randomly selected companies from all EU Member States for the years 2016 (the year prior to the implementation of the Directive) and 2017 (the year following the implementation of the Directive). Their results suggest that the Directive had a positive significant impact on non-financial disclosure. The Directive implementation affected the environmental, social and governance components of the non-financial index.

Cordazzo et al. (2020) have examined the non-financial disclosure practices of 231 Italian listed companies in the pre- (2016) and post- (2017) Directive application. Their results show that companies providing non-financial reports in both the pre- and post-Directive application do not improve their non-financial disclosure, as they do not provide any relevant increase of such information. Companies disclosing information under a mandatory regime limit their disclosure to a minimum requirement. Moreover, Doni et al. (2020), based on a sample of 60 Italian listed companies, have investigated whether the expertise and skills of companies on sustainability reporting can affect the level of compliance with the new mandatory reporting requirements introduced by the Directive. Their results showed that prior skills and competencies in non-financial reporting made a significant contribution.

As research on the extent and determinants of non-financial policy-related disclosure is still limited, there exists a literature gap. In such a context, this chapter focuses specifically on the non-financial policies disclosure as required by the Directive for Polish listed companies and aims to analyse both the extent of non-financial policy disclosure and its determinants related to regulatory changes as well as to skills and competencies of companies in sustainability reporting. This chapter investigates four key variables potentially influencing the extent of non-financial policy disclosure in Poland. These variables are: Directive enforcement, experience in sustainability reporting, foreign ownership and external assurance. The analysis also takes into account the role played by the industry and the size of the company. For this purpose, they represent control variables in our research project.

2.3. Research methodology

2.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in our sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial labour practices were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

2.3.2. Variables

To quantify policy disclosure, the content analysis method was utilized. In order to measure the level of policy disclosure, based on the Directive's requirements, the existence of two content items was examined, namely:

1. A description of the policies pursued by the undertaking in relation to thematic aspects,
2. An outcome of those policies,

in each of the five thematic aspects, namely:

1. Environment (EN),
2. Labour Practices (LP),
3. Human Rights (HR),
4. Community Involvement (CI),
5. Anti-Corruption (AC).

Each thematic aspect in each company was granted points separately. If the content item was present in the report, it scored 1, otherwise it scored 0. Further, we have developed policy sub-indices for each thematic aspect and the total policy index. As the PAA as well as the Directive do not favour one content item or thematic aspect over another, we treated each item and thematic aspect as equally important and we used the same binary scoring for each item/aspect. This approach allowed us to evaluate the extent of policy disclosure made by companies. The policy sub-indices were computed according to the following formula:

$$\text{Policy sub-index} = \frac{\text{Sum of scores obtained by company within a thematic aspect}}{\text{2 (total number of content items)}}$$

Next, a policy disclosure index (Policy index) was computed according to the following formula:

$$\text{Policy index} = \frac{\text{Sum of policy sub-indices by company}}{\text{5 (total number of policy sub-indices)}}$$

In order to decrease the subjectivity of this evaluation, we employed cross-check analysis (scores given by one author were checked independently by the other author and conversely). Discrepancies among the members of the research team were discussed and reconciled.

Table 2.1. Description of independent and control variables

Variables	Description / measurement approach
Independent variables	
Experience in sustainability (EXPERIENCE)	Number of years of experience in sustainability. We counted the difference between the given analysed year and the year when the first information about CSR was disclosed in management report or stand-alone report

Table 2.1 – cont.

Variables	Description / measurement approach
External assurance (ASSURANCE)	Dummy = 1, if non-financial information was assured by external body, 0 otherwise
International presence (INT_PRESENCE)	Dummy = 1, if the company has at least one foreign shareholder having more than 5% of shares, 0 otherwise
Directive 2014/95/EU (DIRECTIVE)	Dummy = 1 for 2017–2019, 0 for 2014–2016
Control variables	
Risky industry (RISKY_IND)	Dummy = 1, if the company belongs to the so-called risky industries, namely: oil and gas, basic materials (including forestry and mining), defence, capital goods, construction, telecommunications and utilities sectors; 0 otherwise
SIZE	Natural logarithm of total assets

Source: Own elaboration.

Independent and control variables together with their measurement approach are presented in Table 2.1. In terms of control variables, this research employs being included in risky industries and the company's size as control variables, as they may influence policy disclosure.

2.3.3. Method of analysis

Three basic types of models, i.e. the pooled model (OLS), the fixed-effect model (FE) and the random-effect model (RE), were used to model panel data in the study. All models were estimated with robust (HAC – heteroskedasticity and autocorrelation consistent) standard errors. The proposed model is as follows:

$$POLICY_{it} = \beta_0 + \beta_{1,it} EXPERIENCE + \beta_{2,it} ASSURANCE +$$
$$+ \beta_{3,it} INT\_PRESENCE + \beta_{4,it} DIRECTIVE + \beta_{5,it} RISKY\_IND + \beta_{6,it} SIZE + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test since the participants are the same in each group.

2.4. Empirical results and discussion

Descriptive statistics are presented in Table 2.2. Among Polish listed companies, the average policy disclosure index is 0.73, indicating that the extent of policy disclosure is relatively high among Polish companies. Standard deviation of policy disclosure is 0.34, suggesting that, on average, the variability in terms of the policy disclosure is quite low among Polish companies.

Table 2.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
Policy index	426	0.10	1.00	0.73	1.00	0.34
Policy_EN	426	0.00	1.00	0.86	1.00	0.30
Policy_LP	426	0.00	1.00	0.77	1.00	0.40
Policy_HR	426	0.00	1.00	0.64	1.00	0.46
Policy_CI	426	0.00	1.00	0.70	1.00	0.41
Policy_AC	426	0.00	1.00	0.70	1.00	0.39
EXPERIENCE	426	0.00	21.00	6.25	6.00	3.72
ASSURANCE	426	0.00	1.00	0.11	0.00	0.31
FOREIGN	426	0.00	1.00	0.47	0.00	0.50
DIRECTIVE	426	0.00	1.00	0.50	0.50	0.50
RISKY_IND	426	0.00	1.00	0.45	0.00	0.50
SIZE	426	11.48	19.67	15.13	14.58	2.07

Source: Own elaboration.

In order to answer the first research question, the development of the reporting extent of the policy index and all policy sub-indices was analysed (Figure 2.1). Generally, the extent of the policy-related disclosure increases over the years under analysis, which is a positive trend among Polish listed companies. In particular, after 2016 a significant increase can be observed, which can be explained by the implementation of the mandatory regulation. In terms of the sub-indices, the lowest extent can be observed in the human rights policy disclosure, as these thematic aspects were not common issues in CSR reporting before the implementation of the mandatory regulation. This cannot be said about the environmental policy disclosure, the extent of which is the highest in the period under analysis.

In order to answer the second research question, we compared the mean policy index and its components before and after the implementation of the Directive (Table 2.3). The results indicate that in each case the change be-

Table 2.3. Comparison of mean policy index and all sub-indices before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	Policy index		Policy_EN		Policy_LP		Policy_HR		Policy_CI		Policy_AC	
		M	CV	M	CV	M	CV	M	CV	M	CV	M	CV
Before implementation (2014–2016)	71	0.52	0.65	0.73	0.49	0.57	0.79	0.39	1.10	0.45	0.92	0.47	0.79
After implementation (2017–2019)	71	0.95	0.12	1.00	0.00	0.98	0.13	0.89	0.28	0.96	0.17	0.92	0.21
Change (%)		83	–81	38	–100	72	–83	131	–74	114	–82	95	–73
Z		6.547		4.937		5.579		6.024		6.177		6.334	
p		<0.001		<0.001		<0.001		<0.001		<0.001		<0.001	

M – mean; CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

Table 2.4. Estimated coefficients from panel data analysis covering years 2014–2019

Policy index (dependent variable)							
Independent variables	VIF	Pooled model		Fixed effects model		Random effects model	
		OLS model		FE model		RE model	
EXPERIENCE	1.41	0.00	(0.81)	0.04	(4.31)***	0.01	(1.71)*
ASSURANCE	1.02	–0.02	(–0.56)	0.00	(–0.1)	–0.01	(–0.26)
INT_PRESENCE	1.16	–0.01	(–0.39)	0.04	(0.36)	0.00	(–0.06)
DIRECTIVE	1.23	0.41	(9.92)***	0.33	(7.35)***	0.39	(9.66)***
RISKY_IND	1.14	0.07	(1.63)	–0.18	(–6.79)***	0.06	(1.53)
SIZE	1.18	–0.00	(6.08)***	–0.07	(–0.73)	–0.00	(5.52)***
INTERCEPT		–0.37	(–2.51)**	1.47	(1.02)	–0.33	(–2.19)**
Firm fixed effects				YES			
n		426		426		426	
Adjusted R^2		0.52		0.60			
Durbin-Watson		0.54		0.92		0.92	
F-test				3.70***			
Breusch-Pagan test						88.29***	
Hausman's test				11.60**			

[(a)] R^2 cannot be reported because the RE estimator does not minimise the sum of squared residuals;
VIF – value inflation factor.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

tween the clustered years is statistically significant (p-value < 0.001). After the implementation of the Directive, the policy index and all the sub-indices increased significantly (the mean increased by 83%, 38%, 72%, 131%, 114% and 95% respectively), but at the same time the variability among the sample companies decreased, which is reflected in a decrease in CV (–81%, –100%, –83%, –74%, –82% and –73% respectively).

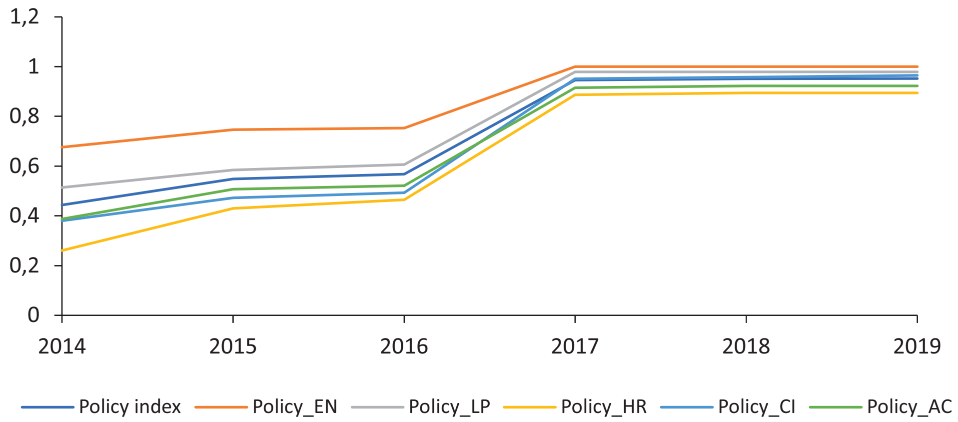

Figure 2.1. Development of non-financial policy-related disclosures (2014–2019)

Source: Own elaboration.

In order to answer the third research question, the panel data analysis was utilized. Having run the necessary tests (F-test, Breusch-Pagan test, Wald test, Hausman's test) for choosing the most adequate model, the fixed-effect model (FE model) was selected as the most appropriate one for this research (Table 2.4).

According to the results, EXPERIENCE and DIRECTIVE were found to have a positive and significant effect on the Policy index ($b1$ = 0.04 and $b4$ = 0.33 respectively with p-value <0.01), whereas the other independent variables, namely ASSURANCE and INT_PRESENCE, had no statistically significant effect on the Policy index. In terms of control variables, the current results show that operating in risky industries has a positive effect on the extent of policy disclosures ($b5$ = –0.18; p-value <0.1).

2.5. Conclusions, limitations and future research agenda

This chapter has investigated the disclosure of non-financial policy and policy outcomes by looking at both the extent of non-financial policy-related disclosure and the determinants of that extent. In particular, we have examined the potential regulatory pressure that requires mandatory non-financial policy-related disclosure under the Directive. The examination indeed showed that the Directive enforcement is associated with the extent of non-financial policy-related disclosure. This extent increased significantly across all thematic aspects after the Directive implementation period. Hence, this finding supports the neo-institutional theory by providing empirical evidence of how companies responded to regulatory pressure and provided non-financial policy-related disclosure. When it comes to the skills and competences of companies in non-financial reporting, evidence showed that the company's prior experience in sustainability reporting had an influence on the extent of non-financial policy-related disclosure.

This research is a preliminary analysis of non-financial policy-related disclosure required by the Directive and has several original points with respect to other studies on the policy disclosure issue. The chapter contributes to filling a relevant gap in the literature related to the insufficient investigation of the disclosure of non-financial policies. In doing so, first, it enriches the literature on non-financial disclosure by employing content analysis and providing a non-financial policy disclosure index based on the requirements of the Directive. Second, it provides empirical evidence of the extent of non-financial policy-related disclosure in the Polish setting over the period of six years. Furthermore, it is the first research study investigating the determinants of non-financial policy-related disclosure in the voluntary and mandatory context (the Polish one) before and after the adoption of the EU Directive.

Given the exploratory nature of our study, it is not without limitations. They are mainly linked to the methodology used. Firstly, we have used content analysis that does not consider the quality of non-financial policy disclosure. Secondly, our study focuses on a small sample of companies; however, the sample encompasses large companies examined over a period of 6 years. Thirdly, we have focused on one country that has not had a long tradition connected with CSR reporting, including reporting on environmental and social policies. It is possible that in countries where companies are more experienced in terms of CSR reporting the findings could be different.

These limitations create new avenues for future research. The extent of non-financial policy-related disclosure and its determinants could be investigated across multiple EU countries.

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Chapter 3

Disclosure of non-financial risks and their management: The determinants and impact of NFRD

3.1. Introduction and research questions

Over the years, due to the recent financial, climate and pandemic crisis, as well as accounting scandals, the importance given to disclosure and the need to provide financial and non-financial information, in general, is increasing, especially in the area of risk.

In fact, risk disclosures are considered to be increasingly important to improve transparency and strengthen market discipline (Leopizzi et al., 2020). Risk disclosures are also among the most important types of non-financial information valued by investors (Veltri, 2020).

Recent regulatory changes in non-financial reporting, such as the ones related to in the European Directive on non-financial disclosure (European Union, 2014), referred to as the Non-Financial Reporting Directive (NFRD), emphasise the importance of extending the disclosure of environmental and social risks within corporate reporting. Given such institutional pressure, the corporate response to providing additional non-financial risk disclosure calls for attention and thorough examination.

The problem is that non-financial related risks are not yet properly included in corporate reporting because only a minority of European companies provide specific information on such risks (Alliance for Corporate Transparency, 2019). Considering the above, the question arises concerning the factors influencing a company's decision on whether or not to disclose information about non-financial related risks. Are there other relevant factors besides the response to the mandatory requirements of the law?

Prior studies on risk disclosure have focused in particular on financial risks. Up to now, only few studies have investigated the extent of non-financial risk-related disclosure (Dumay & Hossain, 2019; Leopizzi et al., 2020). There is also a lack of studies that provide evidence on the determinants of non-financial risk-related disclosures (Bozzolan & Miihkinen, 2019; Fijałkowska & Hadro, 2022; Lamboglia et al., 2019; Truant et al., 2017). As the research on the extent and determinants of non-financial risk-related disclosure is still limited, there exists a literature gap.

In such a context, this chapter focuses specifically on the non-financial risk--related disclosure as required by Directive 2014/95/EU (the Directive) for Polish listed companies and aims to analyse both the extent of non-financial risk disclosure and its determinants.

This study mainly addresses three research questions (RQ):

RQ1: To what extent do Polish listed companies disclose non-financial risk-related information?

RQ2: Does the switch from voluntary to mandatory non-financial disclosure enhance the extent of disclosed non-financial risk-related information?

RQ3: What are the main variables affecting non-financial risk-related disclosure?

In order to answer the above research questions, in the first stage the authors employed content analysis and a self-constructed index to measure the extent of non-financial risk disclosure. A description of risks and their management have been assessed across the five non-financial thematic aspects required by the Directive, namely: environment, labour practices, human rights, community involvement and anti-corruption. In the second stage, the authors used the Wilcoxon signed-rank test to examine the difference between disclosure before and after the implementation of the Directive and the econometric model to test the relationship between the extent of risk disclosure and other relevant variables. The research has been carried out in the fiscal years of 2014–2019 and covered a sample of 71 companies listed on the Warsaw Stock Exchange (WSE) subject to the Directive transposed into the Polish Accounting Act (AA, 2016).

The results, better explained in the section "Results and discussion", show that the extent of non-financial risk disclosure in Polish companies is significantly better than before the introduction of the Directive. Furthermore, we found that the extent of non-financial risk disclosure is significantly influenced not only by the Directive implementation but also by the company experience in sustainability reporting and the company membership in a risky industry.

This research is a preliminary analysis of non-financial risk-related disclosure and has several original points with respect to other studies on the risk disclosure issue. The chapter contributes to filling a relevant gap in the literature related to the insufficient investigation of the disclosure of non-financial risks. In doing so, it enriches the literature on the measurement of the non-financial risk-related disclosure by employing content analysis and providing a non-financial risk disclosure index based on the requirements of the Directive. Besides, it provides empirical evidence of the extent of non-financial risk-related disclosure in the Polish setting. Furthermore, it is the first research study investigating the determinants of non-financial risk-related disclosure in the voluntary and mandatory context (the Polish one) before and after the adoption of the EU Directive.

The remainder of the chapter is as follows: Section 3.2 presents the normative background and literature review, Section 3.3 outlines the research methodology used, Section 3.4 offers the results and discussion, and Section 3.5 presents the main conclusions.

3.2. Institutional background and previous literature

Over the last several decades, and particularly the last 10 years, due to the recent financial scandals, environmental disasters and pandemic periods, the importance given to disclosure and the need to provide financial and non-financial information, in general, has increased significantly, especially in the area of risk. Corporations around the world face an evolving landscape of environmental, social and governance (ESG)-related risks that can impact their profitability, success and even survival. These risks are now far more common and can manifest more quickly. “In 2018, four of the top five risks were environmental or societal, including extreme weather events, water crises, natural disasters, and failure of climate change mitigation and adaptation” (COSO, 2018). A year of the COVID-19 pandemic has also shown that non-financial risks can often prove to be most devastating.

There is also growing attention by large institutional investors to responsible investing. They are seeking to understand how organisations identify and respond to non-financial related risks to achieve long-term, sustained growth. Nowadays risk disclosures are among the most important types of non-financial information valued by investors (Veltri, 2020). In fact, risk disclosures are considered to be increasingly important in order to improve transparency and strengthen market discipline (Leopizzi et al., 2020).

Recent regulatory changes in non-financial reporting, such as the ones related to in the NFRD, emphasise the importance of extending the disclosure of environmental and social risks within corporate reporting. Article 19a (1) of the Directive states:

> Large undertakings (…) shall include in the management report a non-financial statement containing information to the extent necessary for an understanding of

> the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including (…) the principal risks related to those matters linked to the undertaking's operations including, where relevant and proportionate, its business relationships, products or services which are likely to cause adverse impacts in those areas, and how the undertaking manages those risks (…). (European Union, 2014)

The subsequent EU Guidelines 2017/C215/01 on non-financial reporting issued in 2017 (European Commission, 2017) and Supplement 2019/C 209/01 on reporting climate-related information (European Commission, 2019) provide the methodology for reporting on the principal risks (including climate-related risks) and their management. The EU Guidelines and the Supplement encourage companies among others to disclose information on their principal risks and on how they are managed and mitigated as well as to explain the processes used to identify and assess such risks.

In Poland, the Directive was transposed into the Polish Accounting Act, which has been applied since the fiscal year 2017. The PAA requires disclosing a description of the principal risks related to the non-financial thematic aspects linked to the undertaking's operations and a description of how the undertaking manages those risks.

In fact, the Directive does not specify the detailed way on how to report and disclose non-financial information, including information about risk, but it provides that companies may rely on national, Union-based or international frameworks. Among the existing reporting frameworks companies may choose for example the GRI Standards that require companies to provide a detailed description of the risks identification, impact and opportunities over a wide range of social, ethical and environmental topics as well as the effectiveness of the risk management process (GRI, 2020).

Furthermore, the Committee of Sponsoring Organisations of the Treadway Commission (COSO) and the World Business Council for Sustainable Development (WBCSD) have recently partnered to develop a guidance to help companies better understand the full spectrum of ESG-related risks and to manage and disclose them effectively (COSO, 2018).

Given such institutional pressure, the corporate response to providing additional non-financial risk disclosure calls for attention and thorough examination. Neo-institutional theory covers both institutional and market pressures and explains why companies may vary in their response to regulations or even to the best practices among their competitors (Aguilera & Jackson, 2003). Building on this theory, the rational logic behind exhibiting risk information mandatorily and/or voluntarily derives from different levels of pressure from regulations and/or best practices, encouraging companies to respond in order to meet social norms and be acceptable (Chen & Roberts, 2010).

A review of the archival empirical risk-reporting literature over the period of 20 years (1997–2016) shows that disclosure of non-financial risks has been scarcely investigated (Elshandidy et al., 2018). For example, companies mandated to disclose risk-related information focused in particular on financial risks, in spite of the width of the definition of risk (Veltri, 2020). Risk disclosure has been defined by Linsley and Shrives (2006) as information about any opportunity, prospect, hazard, danger, harm, threat or exposure that has or could impact the company in the future. Albeit, there is no universal or agreed-upon definition of non-financial risk, which may also be referred to as ESG-related, sustainability or extra-financial risks. It is a broad term that is usually defined by exclusion, that is, any risks other than the traditional financial risks of market, credit and liquidity (Deloitte, 2020). According to COSO (2018), ESG-related risks are the environmental, social and governance-related risks and/or opportunities that may impact an entity.

Up to now, only few studies have investigated the extent of non-financial risk-related disclosure (Dumay & Hossain, 2019; Leopizzi et al., 2020). Dumay and Hossain (2019) examined the extent to which the top 100 listed companies in Australia disclosed economic, environmental and social sustainability risk factors in the financial year 2014–2015, in the light of changes introducing Recommendation 7.4 to the third edition of the Corporate Governance Principles and Recommendations in 2014. The results showed that companies generally complied with Recommendation 7.4 and disclosed more economic sustainability risk than environmental or social risk. Leopizzi et al. (2020) analysed the level of risk disclosure in 202 Italian companies after the introduction of Directive 2014/95/EU. The results showed how the level of non-financial risk disclosure was better than before the introduction of the Directive and also based on the past and present perspective rather than the future one.

There is also a lack of studies that provide evidence on the determinants of non-financial risk-related disclosures (Lamboglia et al., 2019; Truant et al., 2017). Truant et al. (2017) based their analysis on a sample of 30 large Italian organisations that in 2015 issued sustainability disclosure in accordance with the GRI G4 guidelines, and tested the relationship between their level of risk disclosure and other relevant variables. They found that sustainability risk disclosure is positively influenced by company international presence and reporting experience. Lamboglia et al. (2019) analysed the factors associated with the implementation of environmental risk indicators based on data gathered from 72 Italian listed manufacturing companies for the year 2015. They found that the implementation of environmental risk indicators is positively determined primarily by the following variables: the presence of a chief risk officer, the level of environmental risk score and the complexity of a company.

As research on the extent and determinants of non-financial risk-related disclosure is still limited, there exists a literature gap. In such a context, this chapter tries to fill the actual gap, through focusing specifically on the non-financial risk-related disclosure, as required by the EU Directive for Polish listed companies, and aims to analyse both the extent of non-financial risk disclosure and its determinants. This chapter investigates four key variables potentially influencing the extent of non-financial risk disclosure in Poland. These variables are: Directive enforcement, experience in sustainability reporting, foreign ownership and external assurance.

3.3. Research methodology

3.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN – PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial labour practices were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

3.3.2. Variables

To quantify risk disclosure, the content analysis method was utilized. In order to measure the level of risk disclosure, based on the requirements of the Directive, the existence of two content items was examined, namely:

1. A description of the principal risks related to the thematic aspects linked to the undertaking's operations,
2. A description of how the undertaking manages those risks,

in each of the five thematic aspects, namely:

1. Environment (EN),
2. Labour Practices (LP),
3. Human Rights (HR),
4. Community Involvement (CI),
5. Anti-Corruption (AC).

Each thematic aspect in each company was granted points separately. If the content item was present in the report, it scored 1, otherwise it scored 0. Further, we have developed policy sub-indices for each thematic aspect and the total policy index. As the PAA as well as the Directive do not favour one content item or thematic aspect over another, we treated each item and thematic aspect as equally important and we used the same binary scoring for each item/aspect. This approach allowed us to evaluate the extent of risk disclosure made by companies. A risk disclosure index (RISK) was computed according to the following formula:

$$\text{Risk sub-index} = \frac{\text{Sum of scores obtained by company within thematic aspect}}{\text{2 (total number of content items)}}$$

Next, a risk total index (RISK index) was computed according to the following formula:

$$\text{Risk index} = \frac{\text{Sum of risk sub-indices by company}}{\text{5 (total number of risk sub-indices)}}$$

In order to decrease the subjectivity of this evaluation, we employed cross-check analysis (scores given by one author were checked independently by the other author and conversely). Discrepancies among the members of the research team were discussed and reconciled.

Table 3.1. Description of independent and control variables

Variables	Description / measurement approach
Independent variables	
Experience in sustainability (EXPERIENCE)	Number of years of experience in sustainability. We counted the difference between the given analysed year and the year when the first information about CSR was disclosed in management report or stand-alone report

Table 3.1 – cont.

Variables	Description / measurement approach
External assurance (ASSURANCE)	Dummy = 1, if non-financial information was assured by external body, 0 otherwise
International presence (INT_PRESENCE)	Dummy = 1, if the company has at least one foreign shareholder having more than 5% of shares, 0 otherwise
Directive 2014/95/EU (DIRECTIVE)	Dummy = 1 for 2017–2019, 0 for 2014–2016
Control variables	
Risky industry (RISKY_IND)	Dummy = 1, if the company belongs to the so-called risky industries, oil and gas, basic materials (including forestry and mining), defence, capital goods, construction, telecommunications and utilities sectors; 0 otherwise
SIZE	Natural logarithm of total assets

Source: Own elaboration.

Independent and control variables together with their measurement approach are presented in Table 3.1. In terms of control variables, this research employs being included in risky industries and the company's size as control variables, as they may influence policy disclosure.

3.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effect model (FE) and the random-effect model (RE), were used to model panel data in the study. All models were estimated with robust (HAC – heteroskedasticity and autocorrelation consistent) standard errors. The proposed model is as follows:

$$RISK_{it} = \beta_0 + \beta_{1,it} EXPERIENCE + \beta_{2,it} ASSURANCE + \beta_{3,it} INT\_PRESENCE + \\ + \beta_{4,it} DIRECTIVE + \beta_{5,it} RISKY\_IND + \beta_{6,it} SIZE + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test since the participants are the same in each group.

3.4. Empirical results and discussion

Descriptive statistics are presented in Table 3.2. Among Polish listed companies, the average risk disclosure index is 0.48, indicating that there is room for improvement in terms of the disclosure extent. Standard deviation of risk disclosure is 0.43, suggesting that, on average, the variability among Polish companies in terms of risk disclosure is relatively high.

Table 3.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
Risk index	426	0.00	1.00	0.48	0.40	0.43
Risk_EN	426	0.00	1.00	0.57	1.00	0.47
Risk_LP	426	0.00	1.00	0.52	0.50	0.47
Risk_HR	426	0.00	1.00	0.41	0.00	0.48
Risk_CI	426	0.00	1.00	0.46	0.50	0.47
Risk_AC	426	0.00	1.00	0.42	0.00	0.48
EXPERIENCE	426	0.00	21.00	6.25	6.00	3.72
ASSURANCE	426	0.00	1.00	0.11	0.00	0.31
INT_PRESENCE	426	0.00	1.00	0.47	0.00	0.50
DIRECTIVE	426	0.00	1.00	0.50	0.50	0.50
RISKY_IND	426	0.00	1.00	0.45	0.00	0.50
SIZE	426	11.48	19.67	15.13	14.58	2.07

Source: Own elaboration.

In order to answer the first research question, the development of the extent of reporting of the risk index and all risk sub-indices was analysed (Figure 3.1). Generally, the extent of the risk-related disclosure increases over the years under analysis, which is a positive trend among Polish listed companies. In particular, after 2016 a significant increase can be observed, which can be explained by the implementation of the mandatory regulation. In terms of the sub-indices, the lowest extent can be observed in the human rights and anti-corruption risk disclosure, as these thematic aspects were not common issues in CSR reporting before the implementation of the mandatory regulation. This cannot be said about the environmental risk disclosure, the extent of which is the highest throughout almost all analysed period.

In order to answer the second research question, we compared the mean risk index and its components before and after the implementation of

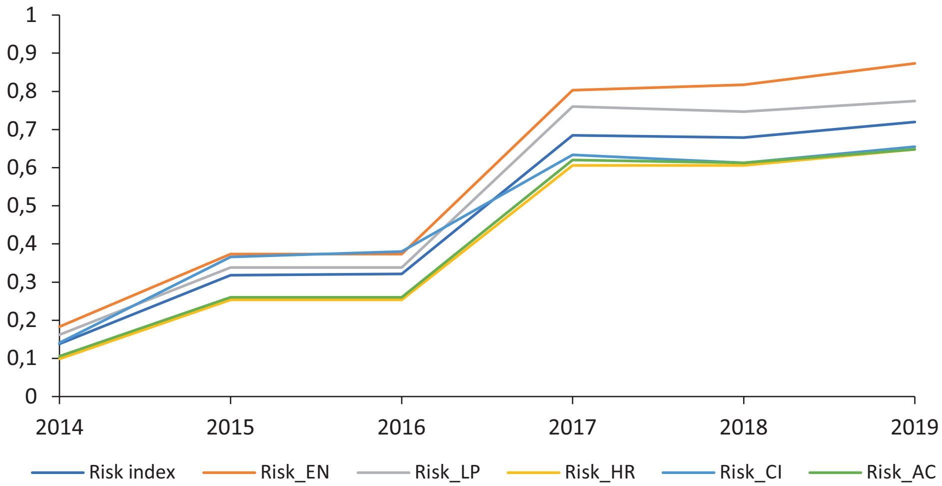

Figure 3.1. Development of non-financial risk-related disclosures (2014–2019)

Source: Own elaboration.

the Directive (Table 3.3). The results indicate that in each case the change between the clustered years is statistically significant (p-value < 0.001). After the implementation of the Directive, the risk index and all its components increased significantly (the mean increased by 167%, 168%, 172%, 206%, 114% and 199% respectively), and at the same time the variability among sample companies de-

Table 3.3. Comparison of mean risk index and all sub-indices before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	Risk index		Risk_EN		Risk_LP		Risk_HR		Risk_CI		Risk_AC	
		M	CV	M	CV	M	CV	M	CV	M	CV	M	CV
Before implementation (2014–2016)	71	0.26	1.33	0.31	1.24	0.28	1.35	0.20	1.72	0.30	1.22	0.21	1.72
After implementation (2017–2019)	71	0.69	0.48	0.83	0.39	0.76	0.50	0.62	0.71	0.63	0.70	0.63	0.71
Change (%)		167	–64	168	–69	172	–63	206	–59	114	–43	199	–59
Z		6.45		6.37		5.96		5.28		4.82		5.34	
p		<0.01		<0.01		<0.01		<0.01		<0.01		<0.01	

M – mean; CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean; Z – Wilcoxon signed-rank test statistics; p – p-value.

Source: Own elaboration.

creased, which is reflected in a decrease in CV (–64%, –69%, –63%, –59%, –43% and –59% respectively). The results seem to indicate that the mandatory regulation affected positively the extent of the non-financial risk-related disclosure.

Table 3.4. Estimated coefficients from panel data analysis covering years 2014–2019

RISK (dependent variable)							
Independent variables	**VIF**	**Pooled model**		**Fixed effects model**		**Random effects model**	
		OLS model		**FE model**		**RE model**	
EXPERIENCE	1.41	0.02	(1.52)	0.06	(4.42)***	0.03	(3.09)***
ASSURANCE	1.02	–0.03	(–0.58)	0.00	(0.07)	0.00	(–0.01)
INT_PRESENCE	1.16	–0.02	(–0.25)	0.18	(1.38)	0.04	(0.6)
DIRECTIVE	1.23	0.38	(6.83)***	0.27	(4.36)***	0.35	(6.61)***
RISKY_IND	1.14	0.13	(1.89)*	–0.31	(–9.69)***	0.13	(1.82)*
SIZE	1.18	–0.00	(2.7)***	–0.03	(–0.36)	–0.00	(2.08)**
INTERCEPT		–0.48	(–2.22)**	0.56	(0.4)	–0.43	(–1.91)*
Firm fixed effects				YES			
n		426		426		426	
Adjusted $R^{2\,(a)}$		0.34		0.49			
Durbin-Watson		0.53		1.19		1.19	
F-test				6.35***			
Breusch-Pagan test						216.23***	
Hausman's test				12.18**			

(a) R^2 cannot be reported because the RE estimator does not minimize the sum of squared residuals; VIF – value inflation factor.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

In order to answer the third research question, the panel data analysis was utilized. Having run the necessary tests (*F*-test, Breusch-Pagan test, Wald test, Hausman's test) for choosing the right model, the fixed-effect model (FE model) was selected as the most appropriate model for this research (Table 3.4).

According to the results, EXPERIENCE and DIRECTIVE were found to have a positive and significant effect on the Policy index ($b1 = 0.04$ and $b4 = 0.33$ respectively with *p*-value < 0.01), whereas the other independent variables, namely ASSURANCE and INT_PRESENCE, had no statistically significant effect on the Policy index. In terms of control variables, the current results show that operating in risky industries has a positive effect on the extent of policy disclosures ($b5 = –0.18$; *p*-value <0.1).

3.5. Conclusions, limitations and future research agenda

This chapter has investigated the disclosure of non-financial risk and risk management, by looking at both the extent of non-financial risk-related disclosure and the determinants of that extent. In particular, we have examined the potential regulatory pressure that requires mandatory non-financial risk-related disclosure under the Directive. The examination indeed showed that the Directive enforcement is associated with the extent of non-financial risk-related disclosure. This extent increased significantly across all thematic aspects after the Directive implementation period. Hence, this finding supports the non-institutional theory by providing empirical evidence of how companies responded to regulatory pressure and provided non-financial risk-related disclosure.

This research is a preliminary analysis of non-financial risk-related disclosure and has several original points with respect to other studies on the risk disclosure issue. The chapter contributes to filling a relevant gap in the literature related to the insufficient investigation of the disclosure of non-financial risks. In doing so, it enriches the literature on the measurement of the non-financial risk-related disclosure by employing content analysis and providing a non-financial risk disclosure index based on the requirements of the Directive. Besides, it provides novel evidence of the extent of non-financial risk-related disclosure in the Polish setting. Furthermore, it is the first research study investigating the determinants of non-financial risk-related disclosure in the voluntary and mandatory context (the Polish one) before and after the adoption of the EU Directive.

Our research has important implications for governments because it reveals that companies have responded positively to the regulator's pressure by increasing non-financial risk-related disclosure. Given the exploratory nature of our study, it is not without limitations. They are mainly linked to the methodology used. Firstly, we have used content analysis that does not consider the quality of non-financial risk disclosure. Secondly, our study focuses on a small sample of companies; however, the sample encompasses large companies examined over a period of six years. Thirdly, we have focused on one country that has not had a long tradition connected with CSR reporting, including risk reporting. It is possible that in countries where companies are more experienced in terms of CSR reporting the findings could be different. These limitations create new avenues for future research. The extent of non-financial risks-related disclosure and its determinants could be investigated across multiple EU countries.

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Chapter 4

Corporate environmental disclosure under the stakeholder pressure: The role of NFRD

4.1. Introduction

Serious changes in global climatic conditions lead to an increase in public awareness of corporate environmental disclosures as a significant area for both the scientific research and business practice. Corporate environmental disclosures are defined as the process of communicating the environmental effects of the corporation's economic operations externally through corporate annual reports (Gerged, 2021).

This chapter offers an examination of the extent to which environmental disclosure is a response to stakeholders' pressure. According to empirical research, stakeholders represent an important factor in the context of non-financial disclosure in developed countries (Ali et al., 2017; Esteban-Arrea & Garcia-Torea, 2022). However, this body of research essentially refers to primary stakeholders as: shareholders, creditors, employees and customers who engage in formal contractual relationships with the company and who have a direct stake in the company and its success. It is generally recognised that companies cannot survive without the consent of these primary stakeholders, and should therefore pay attention to their needs (Thijssens et al., 2015). In fact, there is little focus on investigating the impact of secondary stakeholders, who may be very influential, especially in terms of reputation, but whose stake is more representational than direct. According to empirical research, managers in developed countries pay attention to the concerns of secondary stakeholders, such as the media, environmentalists, regulators and local communities (Ali et al., 2017). The importance of secondary stakeholders, who do not engage in transactions directly related to the going concern of the company and have no formal contractual relationship, is generally emphasised in stakeholder theory (Thijssens et al., 2015). There is a lack of studies that provide evidence on the influence of these stakeholder groups on non-financial disclosures (Kent & Zunker, 2017), and specifically, on environmental disclosure.

Therefore, in this study, we refer to stakeholder theory and we ask how primary and secondary stakeholders influence managerial decision-making on the environmental disclosure. In particular, we ask how the regulators' pressure expressed through the enforcement of Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive, has shaped environmental disclosure provided by listed companies in Poland. Poland has become one of the then 28 EU countries that have transposed the Directive into their national legislation. Since then, extended environmental disclosures are required among certain Polish enterprises by the Polish Accounting Act (PAA) (AA, 2016).

To fill the existing literature gap, this chapter examines the effect of the primary stakeholders' (shareholders, creditors, consumers and employees) as well as the secondary stakeholders' (environment, regulators, standard setters) pressure on the extent of environmental disclosure.

We have analysed the environmental disclosure using content analysis for a sample of 71 companies listed on the Warsaw Stock Exchange (WSE). Our analysis shows that the extent of the environmental disclosure is significantly affected by the stakeholder groups' demands. Among primary stakeholder groups, only customers exert a strong influence on the management intentions regarding the extent of environmental disclosure. As for secondary stakeholder groups, the environment, regulators and standard setters, they all greatly influence managerial choices regarding their environmental disclosure practices.

Thus, the current chapter makes a number of contributions to the literature on corporate environmental disclosure. In particular, we assume that our study contributes to the understanding of the role of secondary stakeholders such as the environment, regulators (Directive 2014/95/EU enforcement) and standard setters (GRI and NFIS) in environmental disclosure.

We begin this chapter with the literature review, theoretical background and hypothesis development, followed by the methods, results and conclusion.

4.2. Stakeholder theory, literature review and hypothesis development

Research on corporate social responsibility disclosures has grown, exploring a variety of determinants in both developed and developing countries (for the empirical research review see: Ali et al., 2017). In developed countries, the concerns of specific stakeholders, for example, investors (shareholders), creditors, regulators, environmentalists and the media are considered very important in disclosing CSR information. There is growing evidence that secondary stakeholders, such as community groups and other non-governmental organisations, are able to induce companies to respond to their needs (Thijssens et al., 2015). However, still little is known about the pressure of different stakeholders' groups and their expectations towards CSR disclosure. In this study, we investigate how primary as well as secondary stakeholders influence managerial decision-making on environmental disclosure. The starting point in this study is stakeholder theory. We focus on the environment, regulators and standard setters as secondary stakeholders, because to fully understand the role of stakeholders' salience in CSR disclosure, it is necessary to understand the roles of both primary and secondary stakeholders (Clarkson, 1995, p. 107).

Research on stakeholder theory (Freeman, 1984; Mitchell et al., 1997; Parmar et al., 2010) argues that companies should consider the interests and claims of non-stockholding groups to guarantee success in the long term. Therefore, a dialogue between the management of companies and their stakeholders is necessary. Companies can initiate this dialogue by communicating the environmental and social impact of their activities. Sustainability reporting practices are even considered as a part of the dialogue between the company and its stakeholders (Gray et al., 1995). However, in this process, companies often do not give the same importance to all their stakeholders due to their varying salience degrees, which are driven mainly by several situational factors (i.e., power, legitimacy and urgency) (Mitchell et al., 1997). Stakeholder theory is therefore useful in exploring the stakeholders' influence, focusing on their information needs and addressing how the companies should tailor their responses. This usually requires taking into consideration which stakeholders' pressure matters most (Miles, 2019).

According to the managerial stakeholder theory, stakeholders have the power to exert pressure on the company to fulfil their expectations, and the management addresses the needs of the groups that are most influential (Kaur & Lodhia, 2018). Assuming sustainability reporting as the primary dialogue mechanism between companies and their stakeholders, the previously mentioned reason suggests that companies will provide a higher extent and higher quality of social and environmental information to those groups of stakeholders who are perceived as most important (Meek et al., 1995).

There is a lack of studies that provide evidence on the influence of different stakeholder groups on environmental disclosure. Gallego-Alvarez et al. (2017) reveal that companies facing distinct stakeholder pressure and institutional constraints exhibit different company-level priorities in environmental reporting policies. Huang and Kung (2010) found that the level of environmental disclosure is significantly affected by the influence of internal, external and intermediate stakeholder groups. However, there has been little focus on investigating the impact of secondary stakeholders on environmental disclosure. Moreover, as Gamerschlag et al. (2011) say, social expectations about what is considered "appropriate behaviour" may evolve over time, and as a consequence, sustainability disclosure can also evolve over time as different stakeholder groups gain or lose power.

To fill the existing literature gap, this chapter investigates six powerful stakeholders' groups influencing the extent of environmental disclosure. These pressure groups include primary (investors, creditors, customers and employees) as well as secondary (the environment, regulators and standard setters) stakeholders.

Investors (shareholders) as stakeholders and the extent of environmental disclosure

Financial and non-financial information positively influences individual investors' investment decisions (Naveed et al., 2020). According to Ernst and Young (2017), publication investors are increasingly considering the environmental as well as social and governance performance of companies when making investment decisions. Recently, investors are becoming increasingly assertive and sophisticated in holding publicly traded companies to account on environmental issues — and it gives results (Scott, 2020). It is expected that the more investors of the company there are, the greater the push from them is to hold the companies accountable for the environmental impact of their practices. Therefore, it is assumed that higher ownership diffusion can apply pressure more effectively, and consequently more environmental information will be disclosed. The H1 can therefore be formulated:

H1: Investors' (shareholders') pressure positively affects the extent of environmental disclosure.

Creditors as stakeholders and the extent of environmental disclosure

According to Parmar et al. (2010), creditors as well as other financiers, such as investors, clearly have a financial stake in the business in the form of provided credits and loans or other financial products, and they expect some kind of financial return from them. According to Yu and Garg (2022), banks are considered quasi-insiders as they can engage with managers at loan origination and closely monitor companies until loan maturity. Banks are directly involved in financing transactions with companies and are key players in reorientation of capital flows towards a more sustainable EU economy. This reorientation is one of key purposes of the EU Action Plan for Sustainable Finance with the adaptation of the Taxonomy Regulation as one of its key actions (European Union, 2018). Namely, with the aim to fulfil the EU's climate and energy targets for 2030, the EU needed a clear and common classification system for sustainable activities. This classification system is designed to be used by investors, companies, banks and other financial institutions while managing their environmental performances across a wide range of industries. According to this EU document, banks will be obliged to incorporate climate risks into their risk management policies in order to reorient capital flows into sustainable investments. Thus, it is expected that the more banks are engaged in the company, the greater the push from them will be to hold the companies accountable for the environmental impact of their practices. The H2 can therefore be formulated:

H2: Creditors' pressure positively affects the extent of environmental disclosure.

Customers as stakeholders and the extent of environmental disclosure

Non-financial disclosure might also be relevant for the second important group of corporate stakeholders, namely, customers. The times when consumers made purchasing decisions based solely on the product quality and price are long gone. Today's consumers are much more demanding and show a significant preference for the environment and people-friendly companies. The majority of customers would like companies to help them be more environmentally-friendly and ethical in their daily lives (Townsend, 2018). Hence, customers need sustainability disclosures (Villiers, 2018). Consumers are increasingly concerned with the environmental and social impacts of the products they purchase and demand information on how these products are sourced and manufactured (Duan et al., 2020). To fulfil these expectations, the companies' response to customer pressure is providing information on issues such as the impact of the product on the environment (carbon footprint, plastic pollution, water consumption) and workforce (exploitation of workers: consumers fear that what they buy was made by slaves or children). It was found that a positive statistical association exists between the proximity to consumers and reporting of environmental practices (Haddock-Fraser & Tourelle, 2010). Thus, it is expected that companies which are more vulnerable to consumer pressure (with high proximity to consumers) will disclose more extensive environmental information. The H3 can therefore be formulated:

H3: Customers' pressure positively affects the extent of environmental disclosure.

Employees as stakeholders and the extent of environmental disclosure

Currently, employees and potential employees are wondering if the company they work for is a sustainable company. Qualified employees understand the importance of sustainable development (Rudyanto & Siregar, 2018). Given this increase in environmental awareness, employees have begun to pay attention to the company's environmental performance. They recognise that passive environmental strategies will lead to poor environmental outcomes, with penalties or damage to reputation, and ultimately undermining the workers' rights and interests. As employees' rights and interests are closely related to the company's prospects, employees are particularly concerned about the company's approach to environmental strategies. Companies with more employees are usually more organised and may use a trade union or a dedicated corporate agency (e.g., a special sector responsible for handling environmental matters) to ensure that their voices reach the management levels within the company. Under such pressure from employees, the company can actively implement environmental strategies and fulfil its social responsibilities. Consequently, the greater the number of employees, the greater their influence on environmental policy. Employees may require a higher degree of transparency of environmental information to avoid jeopardising their rights and interests (Huang & Kung, 2010). It has been found that there is also a positive relationship between the number of employees and voluntary and non-voluntary environment disclosure (Huang & Kung, 2010). Given the above, the H4 can be formulated as follows:

H4: Employees' pressure positively affects the extent of environmental disclosure.

The environment as the stakeholder and the extent of environmental disclosure

According to the CSR literature (Cho & Patten, 2007), companies operating in environmentally sensitive industries tend to disclose more environmental information than other companies in order to obtain legitimacy in their social community. This may be due to the pressure from environmental organisations (such as Greenpeace) and society in general, in which there are groups such as environmentalists and climate activists. Gamerschlag et al. (2011) similarly suppose that companies in "polluting sectors" may be monitored by environmental groups and disclose environmental information to a larger extent than the ones which are not exposed to such influences. Community and environmental organisations demand the company to regenerate the earth that has been damaged by the company's operational activities. To meet these demands, the company tries to take actions in the field of social responsibility and report them transparently (Rudyanto & Siregar, 2018). In line with the above, it is expected that the environmental disclosure is likely to be affected by the environmental sensitivity of the industry. Therefore, the following hypothesis can be made:

H5: Membership in the environmentally sensitive industry positively affects the extent of environmental disclosure.

Standard setters as stakeholders and environmental disclosure extent

There is growing evidence that secondary stakeholders, such as non-governmental organisations, are able to induce companies to respond to their needs (Thijssens et al., 2015). These include organisations that help companies understand and communicate their impacts on issues such as climate change or human resources. These organisations create non-financial reporting frameworks, guidelines or standards and demand their use by companies as the basis for information disclosure. Companies may rely on international guidelines (e.g., GRI Standards, ISO 26000 or UN Global Compact) or national frameworks (e.g., companies in Poland can use the Non-Financial Information Standard — NFIS) that enable them to fulfil reporting obligations regarding non-financial disclosure. While the application of these standards is voluntary, companies that present non-financial information with the use of the GRI or NFIS experience pressure from the above-mentioned organisations to comply with them. According to Hąbek and Wolniak (2016), the adoption of the GRI guidelines could affect the level of sustainability reporting. Hence, we put forward the following hypothesis:

H6: Standard setters' pressure positively affects the extent of environmental disclosure.

Regulators (Directive 2014/95/EU enforcement) as stakeholders and environmental disclosure extent

Among secondary stakeholder groups, the government and regulators have an enormous effect on companies. Government institutions may fine companies that do not meet the legislative obligations regarding reporting on the environmental matters. In recent years, the European Union issued Directive 2014/95/EU (European Union, 2014) which requires large companies with an average of 500 or more employees to disclose non-financial information. Large listed companies need to disclose, among others, information on their environmental matters. More specifically, for these matters, companies must disclose a description of their policy including the due diligence processes implemented, the outcomes of this policy, principal risks and their management on a "comply or explain" basis, with considered reasons for non-disclosure. Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018. Poland has become one of the then 28 European Union (EU) countries that have transposed the Directive into their national legislation. Since then, non-financial disclosures are required among certain Polish enterprises by the Polish Accounting Act (AA, 2016). In the Polish context, before the Directive was implemented, the obligation to report on environmental and employee matters was limited to financial and non-financial ratios presented in the management commentary, if such information was material for the assessment of the undertaking's condition. Thus, based on stakeholder theory, we consider that the publication by the company of their environmental matters is a response to the pressures exerted by Directive 2014/95/EU. The rationale for expecting the Directive to significantly affect environmental disclosure is that companies would be keen to follow new "norms" that are imposed on them (Deegan, 2002). This may be due to the pressure imposed by the government in the form of penalties for non-compliance in the PAA (AA, 2016). In the previous literature, it was clearly stated that companies report quantitatively more under the reporting mandate (Chauvey et al., 2015; Criado-Jiménez et al., 2008). Considering the theoretical and empirical evidence, another hypothesis may be presented:

H7: Regulatory pressure expressed through the enforcement of Directive 2014/95/EU positively affects the extent of environmental disclosure.

4.3. Research methodology

4.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN – PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial environmental disclosure were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

4.3.2. Variables

To quantify the disclosure on environmental practices (dependent variable), the content analysis method was utilized. In order to measure the level of environmental disclosure, based on the Directive's requirements, the existence of non-financial content items was examined, namely:

1. a description of the policies pursued by the undertaking in relation to the environment,
2. a description of the outcome of environmental policies,
3. a description of the principal risks related to the environment,
4. a description of how the undertaking manages risks related to the environment.

If the content item was present in the non-financial statement, it scored 1, otherwise it scored 0.

As the PAA as well as the Directive do not favour any content item over another, we treated each item as equally important, and we used the same binary scoring for each item. This approach allowed us to evaluate the extent of environmental disclosure made by companies. Next, an environmental disclosure index (ENV) was computed according to the following formula:

$$\text{ENV} = \frac{\text{Sum of scores obtained by company}}{\text{4 (total number of content items)}}$$

Table 4.1 presents independent and control variables together with the measurement approach.

Table 4.1. Description of independent and control variables

Variables	Description / measurement approach	References
	Independent variables	
INVESTORS	Share of free float in total number of shares	(Gamerschlag et al., 2011)
CREDITORS	Leverage ratio = Debt / Total equity	(Parmar et al., 2010; Yu & Garg, 2022)
CUSTOMERS	Dummy = 1, if the company's business is customer oriented – B2C, otherwise 0	(Haddock-Fraser & Tourelle, 2010)
EMPLOYEES	Natural logarithm of number of employees	(Huang & Kung, 2010)

Table 4.1 – cont.

Variables	Description / measurement approach	References
ENVIRON-MENT	Dummy = 1, if the company has an impact on the environment; environmentally sensitive industries include: agriculture, automotive, aviation, chemical, construction, construction materials, energy, energy utilities, forest and paper products, logistics, metal products, mining, railroad, waste management and water utilities	(Branco & Rodrigues, 2008; Fernandez-Feijoo et al., 2014; Gamerschlag et al., 2011; Tagesson et al., 2009)
STANDARD	Dummy = 1, if the company uses GRI, NFIS or another well-known framework to present CSR information provided by standard setters; 0 if the company implemented its own approach to reporting or none	(Vurro & Perrini, 2011)
REGULATOR	Dummy = 1 for the timespan 2017–2019 reflecting period after implementation of Directive 2014/95/EU in Poland; 0 for the timespan 2014–2016 reflecting period before implementation of Directive 2014/95/EU in Poland	(Chauvey et al., 2015; Criado-Jiménez et al., 2008; Parmar et al., 2010)
Control variable		
PROFITABILITY	Return of sale measured as net profit divided by total revenue	(Vurro & Perrini, 2011)

Source: Own elaboration.

In terms of control variables, this research employs the company's profitability as a control variable since it may influence environmental disclosure practices.

4.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effects models (FE) and the random-effects model (RE), were used to model panel data in the study. All models were estimated with robust (HAC – heteroskedasticity and autocorrelation consistent) standard errors. The proposed model is as follows:

$$ENV_{it} = \beta_0 + \beta_{1,it}INVESTORS + \beta_{2,it}CREDITORS + \beta_{3,it}CUSTOMERS +$$
$$+\beta_{4,it}EMPLOYEES + \beta_{5,it}ENVIRONMENT + \beta_{6,it}STANDARD +$$
$$+\beta_{7,it}REGULATOR + \beta_{8,it}PROFITABILITY + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test since the participants are the same in each group.

4.4. Empirical results and discussion

Descriptive statistics are presented in Table 4.2. Among Polish listed companies, the level of environmental disclosure varies from the minimum level of 0 to the maximum level of 1. The average ENV is 0.72, indicating relatively high level of environmental disclosure. Standard deviation of ENV is 0.34, suggesting that there is relatively high variability among Polish companies in terms of environmental disclosure.

Table 4.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
ENV	426	0.00	1.00	0.72	1.00	0.34
ENV1	426	0.00	1.00	0.91	1.00	0.28
ENV2	426	0.00	1.00	0.81	1.00	0.39
ENV3	426	0.00	1.00	0.62	1.00	0.49
ENV4	426	0.00	1.00	0.52	1.00	0.50
INVESTORS	426	1.03	72.20	33.74	34.10	15.21
CREDITORS	426	0.59	0.54	0.06	4.50	0.31
CUSTOMERS	426	0.00	1.00	0.52	1.00	0.50
EMPLOYEES	426	5.38	10.68	8.02	7.74	1.17
ENVIRONMENT	426	0.00	1.00	0.61	1.00	0.49
STANDARD	426	0.00	1.00	0.42	0.00	0.49
REGULATOR	426	0.00	1.00	0.50	0.50	0.50
PROFITABILITY	426	–3.24	0.83	0.06	0.05	0.21

Source: Own elaboration.

In table 4.3, we compare the mean ENV index and its components before and after the implementation of the Directive. The results indicate that in each case the change between the clustered years is statistically significant (p-value < 0.001). After the implementation of the directive, the ENV index and all the components increased significantly (the mean increased by 77%, 21%, 60%, 137% and 212% respectively). Furthermore, the variability among the sample companies decreased in relation to the ENV index and all its components.

Table 4.3. Comparison of mean ENV index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	ENV		ENV1		ENV2		ENV3		ENV4	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.52	0.33	0.83	0.34	0.62	0.47	0.37	0.43	0.25	0.39
After implementation (2017–2019)	71	0.92	0.16	1.00	0.00	1.00	0.00	0.87	0.31	0.79	0.38
Change (%)		77	–51	21	–100	60	–100	137	–27	212	–3
Z		6.67		3.72		4.78		6.09		6.00	
p		<0.001		<0.001		<0.001		<0.001		<0.001	

SD – standard deviation; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

In order to verify the developed hypotheses, the panel data analysis was utilized. After running the necessary tests (*F*-test, Breusch-Pagan test, Wald test, Hausman's test) in order to choose the right model, the random effect model was selected as the most appropriate model for this research. Thus, the results of the random effect model are considered for further discussion about the implications of the study (Table 4.4).

According to the results, CUSTOMERS, ENVIRONMENT, STANDARD and REGULATOR were found to have a positive and significant effect on ENV ($b3 = 0.1$; $b5 = 0.2$; $b6 = 0.2$; $b7 = 0.3$ respectively with p-value < 0.01), and thus the H3, H5, H6 and H7 is verified. The other independent variables, i.e., INVESTORS, CREDITORS, EMPLOYEES, have no statistically significant effect on ENV, and thus the H1, H2 and H4 cannot be confirmed. In terms of control variables, the current results show that the company profitability (SIZE) has no statistically significant impact on ENV ($b8 = –0.1$; p-value < 0.1).

4.5. Conclusions, limitations and future research agenda

This chapter examines the effect of the primary stakeholders' (shareholders, creditors, consumers and employees) as well as the secondary stakeholders' (environment, regulators, standard setters) pressure on the extent of environ-

Table 4.4. Estimated coefficients from panel data analysis covering years 2014–2019

Independent variables	VIF	ENV (dependent variable)							
		Pooled model		Fixed effects models				Random effects model	
		OLS		FE model 1		FE model 2		RE	
INVESTORS	1.19	0	(–1.2)	0.00	(–0.59)	0.00	(–0.45)	0.0	(–1.19)
CREDITORS	1.70	–0.13	(–1.64)	–0.02	(–0.12)	–0.02	(–0.13)	–0.1	(–1.23)
CUSTOMERS[a]	1.47	0.12	(2.54)**					0.1	(2.75)***
EMPLOYEES	1.44	0.04	(1.78)*	–0.02	(–0.33)	–0.03	(–0.52)	0.0	(1.63)
ENVIRONMENT[a]	1.45	0.16	(3.22)***					0.2	(3.27)***
STANDARD	1.31	0.24	(6.52)***	0.24	(6.47)***	0.24	(8.74)	0.2	(7.03)***
REGULATOR	1.22	0.31	(8.71)***	0.30	(8.56)***	0.40	(11.89)	0.3	(8.82)***
PROFITABILITY	1.70	0	(0.04)	–0.02	(–0.14)	0.00	(–0.02)	–0.1	(–0.6)
INTERCEPT		0.13	(0.89)	0.68	(1.53)	0.66	(1.44)	0.2	(1.07)
Firm fixed effects				YES		YES			
Year fixed effects						YES			
n		426		426		426		426	
Adjusted R^{2}[b]		0.52		0.61		0.64			
F-test				4.65***					
Breusch-Pagan test								136.18***	
Wald test						23.89***			
Hausman's test								6.9	

[a] The CUSTOMERS and ENVIRONMENT variables were left out of the fixed effects analysis as they are time-invariant variables — they are constant across the years under analysis; [b] R^2 cannot be reported because the RE estimator does not minimise the sum of squared residuals; VIF – value inflation factor.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

mental disclosure. In particular, the potential pressure from the regulators that requires mandatory environmental disclosure under the Directive was examined. The results showed that the Directive enforcement is associated with the extent of environmental disclosure. This extent increased significantly across all content items, namely environmental policy, the outcome of this policy, the associated risks and their management after the Directive implementation period. Hence, this finding supports the stakeholder theory by providing empirical evidence of how companies responded to regulatory pressure in order to provide environmental disclosure. Unexpectedly, primary stakeholders, i.e., investors, creditors and employees, are not significant determinants of environmental disclosure, whereas secondary stakeholders, such as the environment, standard setters and regulators, are.

This study makes at least two major contributions to the literature on the subject. Firstly, this study examines the extent of environmental reporting according to the Directive requirements. Secondly, it provides a deeper understanding of the primary and secondary stakeholders' pressures related to environmental reporting. In particular, our study contributes to the understanding of the impact of regulatory pressure (the Directive) on environmental disclosure practices by EU companies. Our research has important implications for governments because it reveals that companies have responded positively to the regulator's pressure by increasing environmental disclosure.

As with all research, there are limitations related to our study. Firstly, our study focuses on a small sample of companies; however, the sample encompasses large PIEs examined over the period of 6 years. Secondly, we have focused on one country that has not had a long tradition connected with CSR reporting. It is possible that in countries where companies are more experienced in terms of CSR reporting the findings could be different.

These limitations open up some possibilities for future research. The pressure from the enforced Directive 2014/95/EU could be investigated across multiple EU countries.

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Chapter 5

Employee disclosure under the stakeholder pressure: The role of NFRD

5.1. Introduction

Employees (human resources) are considered to be one of the most important components of a company's competitive advantage and a key factor in the success of the company's operations over time (Kent & Zunker, 2013). Recent studies show a significant shift in wealth creation for businesses with the advancement of digital technology and the Internet as well as an increasingly educated workforce (Kent & Zunker, 2017). Companies are expected to disclose employee-related information in their annual reports. For example, the Global Reporting Initiative stresses the importance of disclosing employee-related information in companies' annual reports and expects stakeholders to be interested in a range of topics, including the employee structure and turnover, health and safety, training and education, labor relations, non-discrimination, diversity, forced or compulsory labour and child labour (Global Sustainability Standards Board, 2018).

This chapter proposes to examine the extent to which employee-related disclosure, as a specific form of social disclosure, is a response to stakeholders' pressure. According to empirical research, stakeholders represent an important factor in the context of non-financial disclosure in developed countries (Ali et al., 2017; Esteban-Arrea & Garcia-Torea, 2022). However, this body of research essentially refers to primary stakeholders as: shareholders, creditors, employees and customers, who engage in formal contractual relationships with the company and who have a direct stake in the company and its success. It is generally recognised that companies cannot survive without the consent of these primary stakeholders, and should therefore pay attention to their needs (Thijssens et al., 2015). It shall be noted that there is little focus on investigating the impact of secondary stakeholders, who may be very influential, especially in terms of reputation, but whose stake is more representational than direct. According to empirical research, managers in developed countries pay attention to the concerns of secondary stakeholders, such as the media, environmentalists, regulators and local communities (Ali et al., 2017). The importance of secondary stakeholders, who do not engage in transactions directly related to the going concern of the company and have no formal contractual relationship, is generally emphasised in the stakeholder theory (Thijssens et al., 2015). There is a lack of studies that provide evidence on the influence of these stakeholder groups on non-financial disclosures, and specifically, on employee-related disclosure (Kent & Zunker, 2017).

Therefore, in this study, we refer to stakeholder theory and we ask how primary and secondary stakeholders influence managerial decision-making on the employee-related disclosure. In particular, we ask how the regulators' expressed through the enforcement of Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive (NFRD), has shaped employee-related disclosure provided by listed companies in Poland. Poland has become one of the then 28 EU countries that have transposed the Directive into their national legislation. Since then, extended employee-related disclosures are required among certain Polish enterprises by the Polish Accounting Act

To fill the existing literature gap, this chapter examines the effect of the primary stakeholders' (shareholders, creditors, consumers and employees) as well as secondary stakeholders' (environment, regulator, standard setters) pressure on the extent of employee-related disclosure.

We have analysed the employee-related disclosure using content analysis for a sample of 71 companies listed on the Warsaw Stock Exchange (WSE). Our analysis shows that the extent of the employee-related disclosure is significantly affected by the demands of stakeholder groups. Among primary stakeholder groups, only customers exert a strong influence on the management intentions regarding the extent of employee-related disclosure. As for secondary stakeholder groups, the environment, regulators and standard setters, they all greatly influence managerial choices regarding their employee-related disclosure practices.

Thus, the current chapter makes a number of contributions to the literature on employee-related disclosure. In particular, we assume that our study contributes to the understanding of the role of secondary stakeholders such as the environment, regulators (Directive 2014/95/EU enforcement) and standard setters (GRI and NFIS) in employee-related disclosure.

We begin this chapter with the literature review, theoretical background and hypothesis development, followed by the methods, results and conclusion.

5.2. Stakeholder theory, literature review and hypothesis development

Research on corporate social responsibility disclosures has grown, exploring a variety of determinants in both developed and developing countries (for the empirical research review see: Ali et al., 2017). In developed countries, the concerns of specific stakeholders, for example, investors (shareholders), creditors, regulators, environmentalists and the media are considered very important in disclosing CSR information. There is growing evidence that secondary stakeholders, such as community groups and other non-governmental organisations, are able to induce companies to respond to their needs (Thijssens et al., 2015). However, still little is known about the pressure of different stakeholders' groups and their expectations towards CSR disclosure. In this study, we investigate how primary as well as secondary stakeholders influence managerial decision-making on labour practices disclosure. The starting point in this study is stakeholder theory. We focus on the environment, regulators and standard setters as secondary stakeholders, because to fully understand the role of stakeholder's salience in CSR disclosure, it is necessary to understand the roles of both primary and secondary stakeholders (Clarkson, 1995, p. 107).

Research on stakeholder theory (Freeman, 1984; Mitchell et al., 1997; Parmar et al., 2010) argues that companies should consider the interests and claims of non-stockholding groups to guarantee success in the long term. Therefore, a dialogue between the management of companies and their stakeholders is necessary. Companies can initiate this dialogue by communicating the employee-related and social impact of their activities. Sustainability reporting practices are even considered as a part of the dialogue between the company and its stakeholders (Gray et al., 1995). However, in this process, companies often do not give the same importance to all their stakeholders due to their varying salience degrees, which are driven mainly by several situational factors (i.e., power, legitimacy and urgency) (Mitchell et al., 1997). Stakeholder theory is therefore useful in exploring the stakeholders' influence, focusing on their information needs and addressing how the companies should tailor their responses. This usually requires taking into consideration which stakeholders' pressure matters most (Miles, 2019). According to the managerial stakeholder theory, stakeholders have the power to exert pressure on the company to fulfil their expectations, and the management addresses the needs of the groups that are most influential (Kaur & Lodhia, 2018). Assuming sustainability reporting as the primary dialogue mechanism between companies and their stakeholders, the previously mentioned reason suggests that companies will provide a higher extent and higher quality of environmental and social (including these employee-related) information to those groups of stakeholders who are perceived as most important (Meek et al., 1995).

Studies that provide evidence on the influence of different stakeholder groups on labour practices disclosure are scarce. Kent and Zunker (2017) have isolated only employees as powerful stakeholders and documented that companies with higher employee concentration and employee share ownership disclose employee-related information more voluntarily. There is a lack of research that focuses on investigating the impact of other primary and secondary stakeholders on employee-related disclosure. Moreover, as Gamerschlag et al. (2011) say, social expectations about what is considered "appropriate behaviour" may evolve over time, and as a consequence, sustainability disclosure can also evolve over time as different stakeholder groups gain or lose power.

To fill the existing literature gap, this chapter investigates six powerful stakeholders' groups influencing the extent of employee-related disclosure. These pressure groups include primary (investors, creditors, customers and employees) as well as secondary (the environment, regulators and standard setters) stakeholders.

Investors (shareholders) as stakeholders and the extent of employee-related disclosure

Financial and non-financial information positively influences individual investors' investment decisions (Naveed et al., 2020). According to Ernst and Young (2017), publication investors are increasingly considering the environmental as well as social and governance performance of companies when making investment decisions. Recently, investors have become increasingly assertive in holding listed companies on the issues of social responsibility — and it yields tangible results. It is expected that the more investors a company has, the more pressure there is to enforce socially responsible behaviour, including taking care of the employee-related matters. Therefore, it is assumed that higher ownership diffusion can apply pressure more effectively, and consequently more employee-related information will be disclosed. The H1 can therefore be formulated:

H1: Investors' (shareholders') pressure positively affects the extent of employee-related disclosure.

Creditors as stakeholders and the extent of employee-related disclosure

According to Parmar et al. (2010), creditors as well as other financiers, such as investors, clearly have a financial stake in the business and they expect some kind of financial return. For instance, banks are directly involved in financing transactions with companies in the form of provided credits and loans or other financial products. According to Yu and Garg (2022), banks are considered quasi-insiders as they can engage with managers at loan origination and closely monitor companies until loan maturity. Furthermore, banks have recently become increasingly assertive in holding listed companies on the issues of social responsibility as the play key roles in reorientation of capital flows towards a more sustainable EU economy. This reorientation is one of key purposes of the EU Action Plan for Sustainable Finance with the adaptation of the Taxonomy Regulation as one of its key actions (European Union, 2018). Thus, it is expected that the more creditors a company has, the more pressure there is to enforce socially responsible behaviour, including taking care of the employee-related matters. The H2 can therefore be formulated:

H2: Creditors' pressure positively affects the extent of employee-related disclosure.

Customers as the stakeholders and the extent of employee-related disclosure

Non-financial disclosure might also be relevant for the second important group of corporate stakeholders, namely, customers. The times when consumers made purchasing decisions based solely on the product quality and price are long gone. Today's consumers are much more demanding and show a significant preference for the environment and people-friendly companies. The majority of customers would like companies to help them be more environmentally-friendly and ethical in their daily lives (Townsend, 2018). Hence, customers need sustainability disclosures (Villiers, 2018). Consumers are increasingly concerned with the environmental and social impacts of the products they purchase and demand information on how these products are sourced and manufactured (Duan et al., 2020). To fulfil these expectations, the companies' response to customer pressure is providing information on issues such as the impact of the product on the environment (carbon footprint, plastic pollution, water consumption) and workforce (exploitation of workers: consumers fear that what they buy was made by slaves or children). Thus, it is expected that companies which are more vulnerable to consumer pressure (with high proximity to consumers) will disclose more extensive employee-related information. The H3 can therefore be formulated:

H3: Customers' pressure positively affects the extent of employee-related disclosure.

Employees as stakeholders and the extent of employee-related disclosure

Employees as a group are powerful stakeholders because their work is essential to the economic success of the company. According to Williams and Adams (2013), companies must demonstrate a genuine test of accountability to employees, demonstrate that they have considered and followed the employees' needs and concerns in their decisions, policies and practices. As previous literature shows, employees of large companies are well-organised and their opinions are taken into account when disclosing the CSR practices (Fernandez-Feijoo et al., 2014; Huang & Kung, 2010). In a company with an increased number of employees, more employee incidents and problems are likely to occur. Therefore, the management is more likely to report on employee matters (Kent & Zunker, 2017). At the same time, there is a risk that employees may respond negatively to the company because they believe that the management does not care about the interests of their employees if they do not disclose information about the employees matters (Lev, 1992). Previous research indicates that employee-related disclosures increase with more employee share ownership and employee concentration (Kent & Zunker, 2017). In the light of the above, the H4 is proposed:

H4: Employees' pressure positively affects the extent of employee-related disclosure.

The environment as the stakeholder and the extent of employee-related disclosure

Environmental protection organisations mobilise the organisational power and put pressure on companies that exhibit more negative environmental behaviour, demanding a more efficient and environmentally-friendly production process. They also press companies to disclose details about the environmental impact of their products (Huang & Kung, 2010). According to Krasodomska and Zarzycka (2020), companies that disclose information about environmental issues also disclose the employee matters through key performance indicators. This may be due to the fact that environmental sensitivity may also pose a threat to workers due to the use of harmful substances (e.g., in the chemical industry) or dangerous machines (in industries such as construction, mining, automotive). In line with the above, it is expected that employee-related disclosure is likely to be affected by the environmental sensitivity of the industry. Therefore, the following hypothesis can be made:

H5: Membership in the environmentally sensitive industry positively affects the extent of employee-related disclosure.

Standard setters as stakeholders and employee-related disclosure extent

There is growing evidence that secondary stakeholders, such as non-governmental organisations, are able to induce companies to respond to their needs (Thijssens et al., 2015). These include standards organisations that help companies understand and communicate their impacts on issues such as climate change or human resources. These organisations create non-financial reporting frameworks, guidelines or standards and demand their use by companies as the basis for information disclosure. Companies may rely on international guidelines (e.g., GRI Standards, ISO 26000 or UN Global Compact) or national frameworks (e.g., companies in Poland can use the Non-Financial Information Standard — NFIS) that enable them to fulfil reporting obligations regarding non-financial disclosure. While the application of these standards is voluntary, companies that present non-financial information with the use of the GRI or NFIS experience pressure from standard organisations to comply with them. According to Hąbek and Wolniak (2016), the adoption of the GRI guidelines could affect the level of sustainability reporting. Hence, we put forward the following hypothesis:

H6: Standard setters' pressure positively affects the extent of employee-related disclosure.

Regulators (Directive 2014/95/EU enforcement) as stakeholders and employee-related disclosure extent

Among secondary stakeholder groups, the government and regulators have an enormous effect on companies. Government institutions may fine companies that do not meet the legislative obligations regarding reporting on employee matters. In recent years, the European Union issued Directive 2014/95/EU (European Union, 2014) which requires large companies with an average of 500 or more employees to disclose non-financial information. Large listed companies need to disclose, among others, information on their employee matters. More specifically, for these matters, companies must disclose a description of their policy including the due diligence processes implemented, the outcomes of this policy, principal risks and their management on a "comply or explain" basis, with considered reasons for non-disclosure. Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018. Poland has become one of the then 28 European Union (EU) countries that have transposed the Directive into their national legislation. Since then, non-financial disclosure is required among certain Polish enterprises by the Polish Accounting Act (PAA) (AA, 2016). In the Polish context, before the Directive was implemented, the obligation to report on environmental and employee matters was limited to financial and non-financial ratios presented in the management commentary, if such information was material for the assessment of the undertaking's condition. Thus, based on stakeholder theory, we consider that the publication by the company of their employee matters is a response to the pressures exerted by Directive 2014/95/EU. The rationale for expecting the Directive to significantly affect employee-related disclosure is that companies would be keen to follow new "norms" that are imposed upon them (Deegan, 2002). This may be due to the pressure imposed by the government in the form of penalties for non-compliance in the PAA (AA, 2016). In the previous literature, it was clearly stated that companies report quantitatively more under the reporting mandate (Chauvey et al., 2015; Criado-Jiménez et al., 2008). Considering the theoretical and empirical evidence, another hypothesis may be presented:

H7: Regulatory pressure expressed through the enforcement of Directive 2014/95/EU positively affects the extent of employee-related disclosure.

5.3. Research methodology

5.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial labour practices were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify developed the hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

5.3.2. Variables

To quantify the disclosure on labour practices (dependent variable), the content analysis method was utilized. In order to measure the level of labour practices disclosure, based on the Directive's requirements, the existence of non-financial content items was examined, namely:

1. a description of the policies pursued by the undertaking in relation to labour practices,
2. a description of the outcome of labour practices policies,
3. a description of the principal risks related to the labour practices,
4. a description of how the undertaking manages those risks related to the labour practices.

If the content item was present in the non-financial statement, it scored 1, otherwise it scored 0.

Table 5.1. Description of independent and control variables

Variables	Description / measurement approach	References
Independent variables		
INVESTORS	Share of free float in total number of shares	(Gamerschlag et al., 2011)
CREDITORS	Leverage ratio = Debt / Total equity	(Parmar et al., 2010; Yu & Garg, 2022)
CUSTOMERS	Dummy = 1, if the company's business is customer oriented – B2C, otherwise 0	(Haddock-Fraser & Tourelle, 2010)
EMPLOYEES	Natural logarithm of number of employees	(Haddock-Fraser & Tourelle, 2010)
ENVIRONMENT	Dummy = 1, if the company has an impact on the environment. The environmentally sensitive industries include: agriculture, automotive, aviation, chemical, construction, construction materials, energy, energy utilities, forest and paper products, logistics, metal products, mining, railroad, waste management and water utilities	(Branco & Rodrigues, 2008; Fernandez-Feijoo et al., 2014; Gamerschlag et al., 2011; Tagesson et al., 2009)
STANDARD	Dummy = 1, if the company uses GRI, NFIS or another well-known framework to present CSR information provided by standard setters; 0 if the company implemented its own approach to reporting or none	(Vurro & Perrini, 2011)
REGULATOR	Dummy = 1 for the timespan 2017–2019 reflecting the period after implementation of Directive 2014/95/EU in Poland, and 0 for the timespan 2014–2016, reflecting the period before implementation of Directive 2014/95/EU in Poland.	(Parmar et al., 2010)
Control variable		
PROFITABILITY	Return of sale measured as net profit divided by total revenue	(Vurro & Perrini, 2011)

Source: Own elaboration.

As the PAA as well as the Directive do not favour any content item over another, we treated each item as equally important, and we used the same binary scoring for each item. This approach allowed us to evaluate the extent of labor practices disclosure made by companies. Next, a labour practices disclosure index (LP) was computed according to the following formula:

$$\text{LP disclosure index} = \frac{\text{Sum of scores obtained by company}}{\text{4 (total number of content items)}}$$

Table 5.1 presents independent and control variables together with the measurement approach. In terms of control variables, this research employs the company's profitability as the control variable since it may influence labour practices disclosure.

5.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effects models (FE) the and random-effects model (RE), were used to model panel data in the study. All models were estimated with robust (HAC – heteroskedasticity and autocorrelation consistent) standard errors. The proposed model is as follows:

$$\begin{gathered} LP_{it} = \beta_0 + \beta_{1,it} INVESTORS + \beta_{2,it} CREDITORS + \beta_{3,it} CUSTOMERS + \\ + \beta_{4,it} EMPLOYEES + \beta_{5,it} ENVIRONMENT + \beta_{6,it} STANDARD + \\ + \beta_{7,it} REGULATOR + \beta_{8,it} PROFITABILITY + \varepsilon_{it} \end{gathered}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test since the participants are the same in each group.

5.4. Empirical results and discussion

Descriptive statistics are presented in Table 5.2. Among Polish listed companies, the average LP is 0.65, indicating that there is room for improvement in terms of the disclosure extent. Standard deviation of LP is 0.39, suggesting that, on average, the variability among Polish companies in terms of LP disclosure is quite high.

Table 5.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
LP	426	0.00	1.00	0.65	0.75	0.39
LP1	426	0.00	1.00	0.81	1.00	0.40
LP2	426	0.00	1.00	0.74	1.00	0.44
LP3	426	0.00	1.00	0.57	1.00	0.50
LP4	426	0.00	1.00	0.47	0.00	0.50
INVESTORS	426	1.03	72.20	33.74	34.10	15.21
CREDITORS	426	0.59	0.54	0.06	4.50	0.31
CUSTOMERS	426	0.00	1.00	0.52	1.00	0.50
EMPLOYEES	426	5.38	10.68	8.02	7.74	1.17
ESI	426	0.00	1.00	0.61	1.00	0.49
STANDARD	426	0.00	1.00	0.42	0.00	0.49
DIRECTIVE	426	0.00	1.00	0.50	0.50	0.50
PROFITABILITY	426	–3.24	0.83	0.06	0.05	0.21

Source: Own elaboration.

In table 5.3, we compare the mean LP index and its components before and after the implementation of the Directive. The results indicate that in each case the change between the clustered years is statistically significant (*p*-value < 0.001). After the implementation of the Directive, the LP index and all its components increased significantly (the mean increased by 105%, 58%, 90%, 142% and 216% respectively). The variability among the sample companies decreased in relation to the LP index as well as the LP1, LP2 and LP3 components, which is reflected in a decrease of SD (–41%, –75%, –65% and –10% respec-

Table 5.3. Comparison of mean LP index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	LP		LP1		LP2		LP3		LP4	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.42	0.38	0.62	0.47	0.51	0.47	0.33	0.42	0.23	0.39
After implementation (2017–2019)	71	0.87	0.22	0.99	0.12	0.97	0.17	0.81	0.38	0.71	0.43
Change (%)		105	–41	58	–75	90	–65	142	–10	216	12
Z		6.504		4.703		5.373		5.464		5.683	
p		<0.001		<0.001		<0.001		<0.001		<0.001	

SD – standard deviation; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

tively). In terms of LP4, the variability slightly increased (SD increased by 12%), which can be explained by the fact that before the implementation of the Directive companies did not disclose much about how they mitigated risks related with LP, so the SD was relatively low. After the implementation of the Directive, some companies started reporting LP4 disclosure, which slightly increased variability within this group.

In order to verify the developed hypotheses, the panel data analysis was utilized. After running the necessary tests (*F*-test, Breusch-Pagan test, Wald test, Hausman's test) in order to choose the right model, the fixed-effects model with the time fixed effect (FE model 2) was selected as the most appropriate model for this research. However, our key explanatory variables,

Table 5.4. Estimated coefficients from the panel data analysis covering years 2014–2019

LP (dependent variable)									
Independent variables	**VIF**	**Pooled model**		**Fixed effects models**				**Random effects model**	
		OLS		**FE model 1**		**FE model 2**		**RE**	
INVESTORS	1.187	0	(–0.25)	0.00	(0.73)	0.00	(0.86)	0	(0.31)
CREDITORS		–0.1	(–1.13)	0.02	(0.16)	0.03	(0.23)	–0.06	(–0.75)
CUSTOMERS[a]	1.459	0.13	(2.48)**					0.15	(2.76)***
EMPLOYEES	1.360	0.05	(1.84)*	–0.08	(–1)	–0.10	(–1.15)	0.04	(1.51)
ENVIRONMENT[a]	1.287	0.12	(2.24)**					0.12	(2.27)**
STANDARD	1.311	0.27	(5.87)***	0.21	(4.22)***	0.21	(4.21)***	0.23	(5.08)***
REGULATOR	1.221	0.34	(7.77)***	0.36	(8.45)***	0.45	(10.28)***	0.35	(8.34)***
PROFITABILITY	1.064	0.1	(0.78)	0.06	(0.47)	0.08	(0.63)	0.02	(0.23)
INTERCEPT		–0.09	(–0.58)	0.94	(1.3)	0.94	(1.28)	–0.05	(–0.33)
Firm fixed effects				YES		YES			
Year fixed effects						YES			
n		426		426		426		426	
Adjusted R^{2}[b]		0.49		0.58		0.60		–	
F-test				4.89***					
Breusch-Pagan test								138.78***	
Wald test						23.13***			
Hausman's test								12.62**	

[a] The CUSTOMERS and ESI variables were left out of the fixed effects analysis as they are time-invariant variables — they are constant across the years under analysis; [b] R^2 cannot be reported because the RE estimator does not minimise the sum of squared residuals; VIF – value inflation factor.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

namely CUSTOMERS and ENVIRONMENT, are time-invariant variables (constant over time) and their coefficients in FE models cannot be estimated. According to Wooldridge (2013), if the key explanatory variable is constant over time, we cannot use FE to estimate its effect on LP, and we must rely on the RE (or pooled OLS) estimates. Thus, following the Breusch-Pagan test indicating that the RE model is better than the pooled OLS, the results of the random effects model are considered for further discussion about the implications of the study (Table 5.4).

According to the results, CUSTOMERS, ENVIRONMENT, STANDARD and REGULATOR were found to have a positive and significant effect on LP ($b3 = 0.15$; $b5 = 0.12$; $b6 = 0.23$; $b7 = 0.35$ respectively with p-value < 0.01), and thus the H3, H5, H6 and H7 can be accepted. The other independent variables, namely INVESTORS, CREDITORS and EMPLOYEES, have no statistically significant effect on LP; thus, the H1, H2 and H4 cannot be accepted. In terms of the control variables, the current results show that the profitability of the company has no statistically significant impact on LP ($b8 = 0.02$; p-value < 0.1).

5.5. Conclusions, limitations and future research agenda

This chapter investigates reporting on the employee matters by looking at both the extent of employee-related disclosure and the determinants of that extent coming from stakeholders' groups. In particular, we have examined the potential regulatory pressure that requires mandatory employee-related disclosure under the Directive. Our examination indeed showed that the Directive enforcement is associated with the extent of employee-related disclosure. This extent increased significantly across all content items, namely labour practices policy, the outcome of this policy, the associated risks and their management after the Directive implementation period. Hence, this finding supports the stakeholder theory by providing empirical evidence of how companies responded to the regulatory pressure to provide employee-related disclosure. Unexpectedly, primary stakeholders, namely investors and employees, do not have a significant impact on labour practices disclosure, whereas secondary stakeholders, such as the environment, standard setters and regulators, do have an influence on labour practices disclosure.

This study makes at least two major contributions to the literature on the subject. Firstly, the study examines the extent of labour practices reporting according to the Directive requirements. Secondly, it provides a deeper understanding of the primary and secondary stakeholders' pressures related to labour practices disclosure. In particular, our study contributes to the understanding of the impact of regulatory pressure (the Directive) on labour disclosure practices by EU companies. Our research has important implications for governments because it reveals that companies have responded positively to the regulator's pressure by increasing employee-related disclosure.

As with all research, there are limitations related to our study. Firstly, our study focuses on a small sample of companies; however, the sample encompasses large PIEs examined over the period of 6 years. Secondly, we have focused on one country that has not had a long tradition connected with CSR reporting. It is possible that in countries where companies are more experienced in terms of CSR reporting the findings could be different.

These limitations open up some possibilities for future research. The pressure from the enforced Directive 2014/95/EU could be investigated across multiple EU countries.

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Chapter 6

Human rights disclosure: The coercive pressure of NFRD

6.1. Introduction

The United Nations' (UN) vision of the role of enterprises in human rights was realised by introducing the Guiding Principles of Business and Human Rights in 2011. Reaffirming the role of the state as a defender of human rights, it also defines the role of enterprises as those that should respect human rights, regardless of state obligations (McPhail & Ferguson, 2016). Despite better recognition of human rights as a business issue in corporate reporting in recent years, especially in Western European companies, most reports remain silent about human rights policies or their performance (KPMG, 2017). There is also a gap between reporting on identified human rights risks and disclosure on what companies do about such risks (Alliance for Corporate Transparency, 2019).

Accounting literature generally shows that, in general, human rights disclosure practices around the world are still underdeveloped (Christ et al., 2019; Cubilla-Montilla et al., 2019; Korca et al., 2021), especially when compared with other aspects of CSR disclosure practices (Matuszak & Różańska, 2017). Previous studies also show that companies failed to adhere to the GRI's 'labour' and 'human rights' reporting guidelines (Parsa et al., 2018). This may be explained by the fact that soft disclosure regulations give these companies grounds to avoid improvements in their human rights reporting (Islam & Jain, 2013), and that human rights obligations should be made mandatory rather than considered as a duty of care (Lauwo & Otusanya, 2014).

The rationale behind hard regulation is that disclosure can play a significant role in promoting human rights and fulfilling corporate responsibility to employees and the workforce as regards the company's value chain (Gallhofer et al., 2011). Similarly, Gallhofer et al. (2011) stress the importance of governance in promoting and protecting human rights and emphasise that accounting through disclosure can play a significant role in this process.

In recent years, the European Union (EU) reached an important milestone in the enhancement of the transparency of listed companies' CSR aspects when it issued Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive, requiring large companies with an average of 500 or more employees to disclose non-financial information.

Large listed companies need to disclose, among others, information concerning human rights matters. More specifically, for this matter, companies must disclose a description of their human rights policies including the due diligence processes implemented, the outcomes of these policies, principle human rights risks and their management on a "comply or explain" basis, with considered reasons for non-disclosure. Directive 2014/95/EU (the Directive) is the first reporting regulation to explicitly mention human rights. Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018.

Mandatory reporting on human rights can successfully provide the necessary impetus for the effective enforcement of corporate responsibility for respecting human rights. The question of whether the Directive has fully succeeded in fulfilling this role, however, cannot be answered in an unqualified affirmative way (de Roo, 2015) and without empirical evidence.

Our quantitative study is motivated by this still unanswered question and provides evidence on the role of the Directive in human rights reporting.

Examination of the regulators' pressure on companies to disclose human rights issues can be made within the framework of the coercive isomorphism, a particular subset of institutional theory. The rationale is that this specific principle reflects pressures from powerful stakeholder groups, including regulators (DiMaggio & Powell, 1983). Previous studies on human rights have tested the pressure from different institutional sources (Cubilla-Montilla et al., 2019; Flynn & Walker, 2020), but so far have failed to take into account the pressure from mandatory accounting rules (Hubers & Thijssens, 2020).

Therefore, in this study, we refer to coercive isomorphism and we ask how the Directive pressure has shaped human rights disclosures provided by listed companies in Poland. Poland has become one of the then 28 EU countries that have transposed the Directive into their national legislation. Since then, human rights disclosures are required among certain Polish enterprises by the Polish Accounting Act (PAA) (AA, 2016). In addition, there was no prior reporting legislation on human rights in Poland. We focus on an Eastern European country as companies from this region, are much less likely to acknowledge human rights as a business issue than companies in Western Europe (KPMG, 2017).

To fill the existing literature gap, this chapter examines human rights reporting practices of Polish listed companies by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory human rights disclosure under the Directive.

In order to explore the research question, we have analysed human rights using content analysis and the binary disclosure index in both management reports and, where issued, stand-alone reports for a sample of 71 companies listed on the Warsaw Stock Exchange (WSE). Our analysis shows that the extent of the human rights disclosure across all content items increased significantly after the Directive implementation period compared to the period before the implementation. The findings reveal that the Directive enforcement is associated with the extent of human rights disclosure. Furthermore, inclusion in the Respect Index is positively related to human rights reporting, while the UN Global Compact participation did not turn out to influence on human rights reporting.

Thus, the current chapter makes several important contributions to the scant literature on human rights responsibilities, being a specific subset of CSR reporting. In particular, we assume that our study contributes to the understanding of the impact of the Directive on human rights disclosure, which reflects the role of accounting in promoting human rights and meeting corporate responsibility for employees and the workforce in corporate value chains.

We begin with the literature review, theoretical background and hypothesis development, followed by the methods, results and conclusion.

6.2. Theoretical framework, literature review and hypothesis development

6.2.1. Literature review

Accounting through disclosure can play a significant role in promoting and protecting human rights (Gallhofer et al., 2011). However, this specific issue of CSR reporting has not yet become a focus area for social and environmental accounting researchers. To date, there is little but growing research on human rights disclosure, which is an integral part of CSR reporting.

First, there are scant empirical studies which generally show a low level of human rights disclosure (Christ et al., 2019; Cubilla-Montilla et al., 2019; Islam & Jain, 2013; Matuszak & Różańska, 2017; Mengual, 2022). For example, Islam and Jain (2013) focused on major Australian garment and retail companies and found a low level of human rights disclosures. Christ et al. (2019) gathered evidence about modern slavery disclosure by the top 100 Australian listed companies and documented that the volume and quality of disclosures are low. In the Polish setting, Matuszak and Różańska (2017) stated that, among other CSR matters, human rights deserve careful attention, as this aspect is not disclosed by most companies listed on the WSE, and a large number of companies still have a considerable amount of work to do in order to improve the level of reporting in the area of human rights.

Second, interestingly, most previous studies examine pressure on companies to disclose human rights issues from different institutional sources. In particular, Cubilla-Montilla et al. (2019) stated that society's cultural values, as normative institutional pressure, are currently insufficient to increase information on the practices that companies undertake in relation to commitments to human and labour rights. A study by Christ et al. (2019) helps to understand the institutional pressures that currently drive the behaviour of companies in relation to modern slavery issues. In more detail, the response of the sampled Australian companies to increasing pressure to report on their efforts to combat modern slavery practices remains very marginally in line with the concepts of mimetic and normative institutional pressures. This supports the idea that legislation is needed to encourage further engagement. In line with coercive institutional pressure, Islam and McPhail (2011) explored the role that international governmental organisations, such as the ILO (International Labour Organisation), may have played in human rights disclosures. While Parsa et al. (2018) examined how successful the GRI has been in enhancing comparability and transparency of 'labour' and 'human rights' reporting.

In fact, the previous literature failed to take into account the pressure from mandatory accounting rules that are considered one of coercive institutional factors. Hubers and Thijssens (2020) made an attempt to assess the potential impact of the EU non-financial reporting regulation on human rights disclosures among Dutch financial services listed companies. However, the results of regression analyses, in which the authors control for time trends, show that, in fact, there is no such effect. The lack of statistically significant results may be due to numerous limitations of the study, including a small research sample.

To fill the existing literature gap, this chapter examines human rights reporting practices of Polish listed companies, by looking at both the extent of human rights disclosure and the determinants of that extent, in particular the potential pressure from the regulator that requires mandatory human rights disclosure under the Directive.

6.2.2. Theoretical framework

The question of how human rights disclosures provided by companies are shaped can be addressed through institutional theory that has been cited many times in the accounting literature (Christ et al., 2019; Islam & McPhail, 2011). The theory is considered appropriate for this issue as it provides a theoretical explanation of how companies respond to institutional forces to undertake particular activities (DiMaggio & Powell, 1983; Flynn & Walker, 2020), including human rights disclosure practices. For example, regulators and civil society groups can coerce companies to act in certain ways, professional organisations exert a normative influence on companies, and interactions with peers lead companies to imitate each other (DiMaggio & Powell, 1983). Within the framework of coercive isomorphism, i.e. a particular subset of institutional theory, an organisation provides disclosure as a response to pressures from influential stakeholders (Deegan, 2014). Powerful institutions that can pressure an organisation to adopt specific disclosure practices include governments, certification bodies and politically powerful stakeholders among others (Deegan & Unerman, 2011). When pressures from these stakeholder groups arise, an organisation needs to respond to obtain legitimacy (DiMaggio & Powell, 1983). However, companies are not passive players in this process, and institutional theorists acknowledge that there is resistance to institutional demands, and companies can even reject institutional expectations (Oliver, 1991).

In this study we use institutional theory and its predictions about the effects of coercive institutional pressure on companies. This is because regulators reflect pressure through, e.g., law enforcement (DiMaggio & Powell, 1983), as in the case of transposing the Directive into the national legislation of EU member states. To strengthen contributions to the existing literature, this study explores not only pressure from regulators but also pressures from other possible coercive sources.

6.2.3. Hypotheses development

This chapter investigates three key coercive variables potentially influencing the extent of human rights disclosure in Poland. These variables are: Directive enforcement, UN Global Compact membership and inclusion in the Respect Index.

Directive 2014/95/EU enforcement

The rationale for expecting Directive to significantly affect human rights disclosure is that companies would be keen to follow new “norms” that are imposed upon them (Deegan, 2002). According to institutional theory, companies may strive to increase the insufficient and non-compliant level of human rights disclosures to reduce the regulatory pressure.

Assessments of the state of the art of non-financial reporting made prior to the implementation of the Directive by Matuszak and Różańska (2017) showed that there was an information gap regarding some of the aspects required by the Directive. As noted by Matuszak and Różańska (2017), the tested companies placed little emphasis especially on reporting about human rights. What is more, according to the Alliance for Corporate Transparency Research database, companies still show low levels of disclosure of human rights policies, outcomes and risk management even after the implementation of the Directive. Unfortunately, no research confirms the potential impact of the Directive on the extent of human rights disclosures.

In the previous literature, it was clearly stated that the overall reporting quantity increased subsequent to a non-financial mandate (Damak-Ayadi, 2011; Kerret et al., 2010). With this in mind, we expect that the extent of non-financial disclosures will increase even in such a specific area as human rights. Taking into consideration the theoretical and empirical evidence, we put forward the following hypothesis:

H1: There is a positive relationship between Directive 2014/95/EU enforcement and the extent of human rights disclosure.

Participation in UN Global Compact

Another source of institutional pressure can be international human rights accords. These include the International Labour Organisation and the UN Global Compact among others. Although adherence to these accords is voluntary, companies experience coercion from the originators of these accords as well as from NGOs to commit to them (Flynn & Walker, 2020).

Previous studies showed that the ILO plays an important role in the emerging disclosure of corporate accountability for workplace rights. Since the ILO's standards were endorsed and accepted by the global community, the number of companies disclosing information about workplace human rights has increased significantly (Islam & McPhail, 2011). With regard to the UN Global Compact, it was found that this initiative has a positive impact on the comprehensiveness of CSR reporting (Fortanier et al., 2011). Hence, we make the following hypothesis:

H2: There is a positive relationship between participation in the UN Global Compact and the extent of human rights disclosure.

Inclusion in the Respect Index

Institutional pressures could potentially also apply to local and regional initiatives that may exert a positive influence on human rights reporting. A key example here is the Respect Index, which is the first index of companies respecting the CSR rules in the region of Central and Eastern Europe.

The Respect Index portfolio covers Polish companies listed on the WSE Main Market which operate in accordance with the highest standards of management with regard to corporate governance, reporting and investor relations standards, and which also include environmental, social and governance factors (Macuda et al., 2015). The participating companies are screened by both the WSE and the Association of Listed Companies. If a company does not respond to coercive pressures from the project makers, its membership will be terminated. As transparency, accountability and communication with stakeholders are at the core of this project, we would expect that corporate inclusion in the Respect Index has a positive impact on human rights disclosure. Previous studies document the statistically significant positive impact of inclusion in the Respect Index on non-financial disclosure practices, yet excluding ethical matters before the Directive implementation (Dumitru et al., 2017). Taking into account the above considerations, we hypothesise that:

H3: There is a positive relationship between inclusion in the Respect Index portfolio and the extent of human rights disclosure.

6.3. Research methodology

6.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial human rights information were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

6.3.2. Variables

To quantify the disclosure on human rights practices (dependent variable), the content analysis method was utilized. In order to measure the level of human rights disclosures, based on the Directive's requirements, the existence of non-financial content items was examined, namely:

1. a description of the policies pursued by the undertaking in relation to human rights,
2. a description of the outcome of human rights policies,
3. a description of the principal risks related to human rights,
4. a description of how the undertaking manages the risks related to human rights.

If the content item was present in the management commentary or stand-alone CSR report, it scored 1, otherwise it scored 0.

As the PAA as well as the Directive do not favour any content item over another, we treated each item as equally important, and we used the same binary scoring for each item. This approach allowed us to evaluate the extent of human rights disclosure made by companies. Next, a human rights disclosure index (HR) was computed according to the following formula:

$$\text{HR disclosure index} = \frac{\text{Sum of scores obtained by company}}{\text{4 (total number of content items)}}$$

Table 6.1 presents independent and control variables together with the measurement approach.

Table 6.1. Description of independent and control variables

Variables	Description / measurement approach
Independent variables	
Directive 2014/95/EU (DIRECTIVE)	Dummy = 1 for 2017–2019, 0 for 2014–2016
Respect index (RESPECT)	Dummy = 1, if the company is listed in the Respect index, 0 otherwise
UN Global Compact (UNGC)	Dummy = 1, if the company is a member of the UN Global Compact, 0 otherwise
Control variables	
Risky industry (RISKY_IND)	Dummy = 1, if the company is a member of a high-risk industry (Alliance for Corporate Transparency, 2019), namely: apparel, textiles, food, beverages sectors; 0 otherwise.
Company size (SIZE)	The value of assets in mln PLN

Source: Own elaboration.

In terms of control variables, in line with previous studies (Brammer & Pavelin, 2006; Dumitru et al., 2017), this research employs the company size and industry type as control variables as they may influence human rights disclosure practices.

6.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effects model (FE) and the random-effects model (RE), were used to model panel data in the study. This procedure allowed us to choose an appropriate model for further analysis. The proposed model is the following:

$$HR_{it} = \beta_0 + \beta_{1,it}DIRECTIVE + \beta_{2,it}RESPECT + \beta_{3,it}UNGC + \\ + \beta_{4,it}RISKY\_IND + \beta_{5,it}SIZE + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test. According to Field (2018), the Wilcoxon signed-rank test is a non-parametric test that can be used in situations in which there are two sets of scores to compare, but these scores come from the same participants.

6.4. Empirical results and discussion

Descriptive statistics are presented in Table 6.2. Among Polish listed companies, the level of human rights disclosures varies from the minimum level of 0 to the maximum level of 1. The average HR is 0.52, indicating that there is room for improvement in terms of the disclosure extent. Standard deviation of HR is 0.42, suggesting that there is high variability among Polish companies in terms of human rights disclosure.

In Table 6.3, we compare the mean HR index and its components before and after the implementation of the Directive. The results indicate that in each case the change between the clustered years is statistically significant (*p*-value < 0.001). After the implementation of the directive, the HR index and all the components increased significantly (the mean increased by 157%, 121%, 144%, 210% and 202% respectively); however, the variability among the sample companies decreased, but only in relation to the HR index as well as the HR1 and

HR2 components, which is reflected in a decrease in SD (–20%, –44% and –22% respectively). In terms of HR3 and HR4, the variability increased (SD increased 22% and 37% respectively). This last result can be explained by indicating that companies did not disclose much about human rights issues in general before the Directive implementation. After the implementation of the Directive, in the majority of cases companies started reporting about human rights policies and their outcomes (HR1 and HR2), but some of them do not treat their activity as violating human rights, and thus do not identify the HR risks and how they mitigate those risks (HR3 and HR4).

Table 6.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
HR	426	0.00	1.00	0.52	0.50	0.42
HR1	426	0.00	1.00	0.67	1.00	0.47
HR2	426	0.00	1.00	0.61	1.00	0.49
HR4	426	0.00	1.00	0.44	0.00	0.50
HR5	426	0.00	1.00	0.38	0.00	0.49
RESPECT	426	0.00	1.00	0.33	0.00	0.47
UNGC	426	0.00	1.00	0.10	0.00	0.30
RISKY_IND	426	0.00	1.00	0.07	0.00	0.26
SIZE (mln)	426	97.08	348044.00	26289.55	2154.09	56276.81

Source: Own elaboration.

Table 6.3. Comparison of mean HR index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	HR		HR1		HR2		HR3		HR4	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.29	0.36	0.42	0.44	0.35	0.44	0.22	0.37	0.19	0.35
After implementation (2017–2019)	71	0.76	0.29	0.92	0.25	0.86	0.34	0.67	0.45	0.57	0.48
Change (%)		157	–20	121		–44	144	–22	210	22	202
Z		6.43		5.69			5.58		5.19		4.86
p		<0.001		<0.001			<0.001		<0.001		<0.001

SD – standard deviation; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

In order to verify the above-developed hypotheses, the panel data analysis was utilized. After running the necessary tests (*F*-test, Breusch-Pagan test, Hausman's test) in order to choose the right model, the fixed effect model was selected. However, this model cannot be estimated due to the issue of collinearity among two variables — UNGC and RISKY_IND. Therefore, following the Breusch-Pagan test, the results of a random effects model were considered for further discussion about the implications of the study (Table 6.4).

According to the results, the Directive (DIRECTIVE) was found to have a positive significant effect on HR ($b1 = 0.26$; p-value < 0.01), and thus the first hypothesis (H1) is accepted.

Being listed on the Respect Index is positively and statistically significantly related to HR ($b2 = 0.45$, p-value < 0.05), and thus the H2 can be accepted as well. However, this cannot be said about being a member of UNGC, which has no statistically significant effect on HR, and thus hypothesis H3 cannot be accepted.

In terms of control variables, only being a member of risky industries (RISKY_IND) has statistically significant and positive impact on HR ($b4 = 0.03$; p-value < 0.05).

Table 6.4. Estimated coefficients of the primary stakeholders' from the panel data analysis covering years 2014–2019

Independent variables	VIF	Pooled model		Random effects model	
		OLS		RE	
DIRECTIVE	1.01	0.45	(9.29)***	0.26	(6.16)***
RESPECT	1.30	0.25	(3.93)***	0.45	(9.71)**
UNGC	1.42	–0.01	(–0.08)	0.14	(1.96)
RISKY_IND	1.32	–0.12	(–1.66)*	0.03	(0.28)**
SIZE	1.25	0.00	(0.22)	–0.16	(–2.19)
INTERCEPT		0.23	(5.79)***	0.26	(6.16)***
n		426		426	
Adjusted R^2		0.39			
F-test				4.77***	
Breusch-Pagan test				118.82***	
Hausman's test				19.12**	

VIF – value inflation factor.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

6.5. Conclusions, limitations and future research agenda

This chapter has investigated human rights reporting practices by looking at both the extent of human rights disclosure and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory human rights disclosure under the Directive. An examination indeed showed that the Directive enforcement is associated with the extent of human rights disclosure. This extent increased significantly across all content items, namely human rights policy, the outcome of this policy, the associated risks and their management after the Directive implementation period. Hence, this finding supports institutional theory by providing empirical evidence of how companies responded to regulatory pressure in order to provide human rights disclosure. Additionally, inclusion in the Respect Index is positively related to human rights reporting, while participation in the UN Global Compact did not turn out to influence human rights reporting. Thus, with regard to the UN Global Compact, institutional pressure has not produced the intended results.

The current chapter makes two important contributions to the literature. Firstly, it provides an insight into corporate disclosure on human rights responsibilities, a specific subset of CSR reporting where there is almost no academic literature at present. Secondly, it contributes towards a better understanding of possible coercive pressures on human rights reporting. In particular, we assume that our study contributes to the understanding of the impact of the Directive on human rights disclosure, which reflects the role of accounting in promoting human rights and meeting corporate responsibility for employees and the workforce in corporate value chains.

Furthermore, our research has important implications also for governments because it reveals that companies have responded positively to the regulator's pressure by increasing human rights disclosure.

As with any empirical research, this study has its limitations. Firstly, the research focuses on coercive factors and does not consider other institutional factors that pressure companies in normative and mimetic ways. Secondly, our study focuses on disclosure practices in one EU country, offering no insight into how companies from different EU countries would respond to the pressure of mandatory regulation in the area of human rights. Future research should consider extending our research to encompass each of the above-mentioned limitations.

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Chapter 7

Corporate anti-corruption disclosure: Examination of the coercive pressure of NFRD

7.1. Introduction

There is a growing global demand for better disclosures provided by listed companies, as stakeholders nowadays do not only expect the financial performance of listed companies, but also their performance in various aspects of corporate social responsibility (CSR), including anti-corruption.

Corruption may be defined as “the abuse of entrusted power for private gain” (Transparency International, n.d.). It has negative consequences to society and hazardous impacts on companies (Barkemeyer et al., 2015). Corruption matters for business because it hampers growth, escalates costs and poses serious legal and reputational risks (UN Global Compact, n.d.). Hence, transparency of corporate reporting may have an important role to play in constraining corruption.

Although corruption issues have become a standard element of mainstream reporting guidelines, such as those by the GRI, research shows that, overall, anti-corruption disclosure practices around the world are still underdeveloped (Asare et al., 2021; Branco & Matos, 2016; Islam et al., 2017; Issa & Alleyne, 2018; Korca et al., 2021; Masud et al., 2022; Sari et al., 2020), especially when compared with other aspects of CSR disclosure practices (Matuszak & Różańska, 2017). Reporting on corruption by many companies has often been superficial and incomplete because this issue is complex and highly sensitive, and public disclosures of such issues can lead to misguided perceptions (ACCA, 2008).

In recent years, the European Union (EU) reached an important milestone in the enhancement of the transparency of the CSR aspects of listed companies when it issued its Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive, to require large companies with an average of 500 or more employees to disclose non-financial information. Large listed companies need to disclose, among others, information on their anti-corruption and bribery matters. More specifically, companies must disclose a description of their policy including the due diligence processes implemented, the outcomes of this policy, principal risks and their management on a "comply or explain" basis, with considered reasons for non-disclosure. Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018.

Our study responds to a call in the literature to investigate the pressure from regulators on companies to disclose anti-corruption actions (D'onza et al., 2017). Such an examination can be made within the framework of coercive isomorphism, i.e. a particular subset of institutional theory (Sari et al., 2020). The rationale is that this specific principle reflects pressures from powerful stakeholder groups, including regulators (DiMaggio & Powell, 1983). Previous studies have tested the pressure from different coercive sources (Barkemeyer et al., 2015; Sari et al., 2020), but so far have not taken into account the pressure from mandatory accounting regulations.

Therefore, in this study, we refer to coercive isomorphism and we ask how the pressure from Directive 2014/95/EU (the Directive) has shaped anti-corruption disclosures provided by listed companies in Poland, one of the most corrupted countries in the EU according to a report by Transparency International (Transparency International, 2019). Poland has become one of the then 28 EU countries that have transposed the Directive into their national legislation. Since then, anti-corruption disclosures are required among certain Polish enterprises by the Polish Accounting Act (PAA) (AA, 2016).

To fill the existing literature gap, this chapter examines anti-corruption reporting practices of Polish listed companies by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory anti-corruption disclosure under the Directive.

In order to explore the research question, we have analysed the anti-corruption disclosure using content analysis for a sample of 71 companies listed on the Warsaw Stock Exchange (WSE). Our analysis shows that the extent of the anti-corruption disclosure across all content items increased significantly after the Directive implementation period compared to the period before the implementation. The findings reveal that the Directive enforcement is associated with the extent of anti-corruption disclosure. Surprisingly, other coercive variables, namely inclusion in the Respect Index, government ownership and foreign ownership are not significant determinants of anti-corruption reporting.

Thus, the current chapter makes a number of contributions to the rare literature on anti-corruption disclosure, a specific subset of CSR reporting. In particular, we assume that our study contributes to the understanding of the impact of the Directive on anti-corruption disclosure, which reflects the role of accounting in combating corruption.

We begin this chapter with the literature review, theoretical background and hypothesis development, followed by the methods, results and conclusion.

7.2. Theoretical framework, literature review and hypothesis development

7.2.1. Literature review

Corruption is an important topic for accounting researchers, among others. As the purpose of accounting is to provide information on the financial performance and, increasingly, the CSR performance of a company, its role also includes providing the data necessary to control and prevent corruption activities (Barkemeyer et al., 2015). Therefore, increased transparency in corporate reporting leads to a greater likelihood of detection of corrupt acts, which reduces information asymmetry between principals and agents and enables shareholders and other stakeholders to make more informed decisions (Wu, 2005). Hence, anti-corruption disclosures are closely related to the role of accounting in the struggle against corruption. To date, there is little yet growing literature on anti-corruption disclosure practices as an integral part of CSR reporting.

First, there are descriptive studies which generally show low disclosure levels (Issa & Alleyne, 2018; Matuszak & Różańska, 2017). For example, Issa and Alleyne (2018) documented a state of limited maturity regarding the disclosure of anti-corruption procedures in the sustainability reports of 66 Gulf Cooperation Council companies in Saudi Arabia, Oman, Kuwait, Bahrain, UAE and Qatar. In the Polish setting, Matuszak and Różańska (2017) stated that among other CSR matters, anti-corruption deserves careful attention, as it is not disclosed by most companies listed on the WSE.

Second, there are examinations of factors explaining the variability of disclosures. Previous studies proved, among others, that pressure from different coercive sources has a positive impact on the level of anti-corruption reporting. In particular, participation in corruption-related initiatives was found to be positively related to corruption-related reporting (Barkemeyer et al., 2015; Branco & Matos, 2016). Additionally, variables related to the ownership structure, such as state or foreign ownership, were found to have an influence on anti-corruption disclosure. For example, Sari et al. (2020) showed that the dependence on government tenders and foreign ownership is associated with the level of disclosure. Furthermore, Branco and Matos (2016) documented that government-owned companies seem to exhibit greater concern in order to improve their corporate image through disclosure.

In fact, the literature also recommends examining pressure from regulators on companies to disclose anti-corruption efforts (D'onza et al., 2017). Such an examination can be made within the framework of coercive isomorphism, a particular subset of institutional theory (Sari et al., 2020). The rationale is that this specific principle reflects pressures from powerful stakeholder groups, including regulators (DiMaggio & Powell, 1983). Studies so far have not taken into account the pressure from mandatory accounting regulations.

To fill the existing literature gap, this chapter examines anti-corruption reporting practices of Polish listed companies by looking at both the extent of anti-corruption disclosure and the determinants of that extent, in particular the potential pressure from the regulator that requires mandatory anti-corruption disclosure under the Directive.

7.2.2. Theoretical framework

The question of how anti-corruption disclosures provided by companies are shaped can be addressed through institutional theory that has been cited many times in the accounting literature (Barkemeyer et al., 2015; Issa & Alleyne, 2018; Sari et al., 2020). The theory is considered appropriate for this question as it provides a theoretical explanation of how companies respond to non-market pressures to undertake particular activities (DiMaggio & Powell, 1983; Issa & Alleyne, 2018), including anti-corruption disclosure practices. Within the framework of coercive isomorphism, a particular subset of institutional theory, an organisation provides disclosure as a response to pressures from influential stakeholders (Deegan, 2014). Powerful institutions that can pressure an organisation to adopt specific disclosure practices include governments, certification body and politically powerful stakeholders among others (Deegan & Unerman, 2011). When pressures from these stakeholder groups arise, an organisation needs to respond in order to obtain legitimacy (DiMaggio & Powell, 1983). However, organisations may have varying degrees of freedom to take strategic responses to institutional pressures (Barkemeyer et al., 2015).

In response to the previous recommendations found in the literature to investigate the regulators' pressure on companies to report their anti-corruption efforts (D'onza et al., 2017), this study has adopted coercive isomorphism. This is because regulators reflect pressure through, for example, law enforcement (DiMaggio & Powell, 1983), as in the case of transposing the Directive into the national legislation of the EU member states. To strengthen contributions to the existing literature, this study does not only explore the pressure from regulators but also pressures from other possible coercive sources.

7.2.3. Hypotheses development

This chapter investigates four key coercive variables potentially influencing the extent of anti-corruption disclosure in Poland. These variables are: Directive enforcement, inclusion in the Respect Index, government ownership and foreign ownership.

Directive 2014/95/EU enforcement

The rationale for expecting the Directive to significantly affect anti-corruption disclosure is that companies would be keen to follow new "norms" that are imposed upon them (Deegan, 2002). According to institutional theory, companies may strive to increase the insufficient and non-compliant level of anti-corruption disclosures to reduce the regulatory pressure.

Assessments of the state of the art of non-financial reporting made prior to the implementation of the Directive by Matuszak and Różańska (2017) showed that there was an information gap regarding some of the aspects required by the Directive. As noted by Matuszak and Różańska (2017), the tested companies placed little emphasis especially on reporting about anti-corruption. What is more, research conducted by Skoczylas-Tworek (2020) after the implementation of the Directive has depicted that companies still show considerable restraint in disclosing anti-corruption information. Unfortunately, no research confirms the potential impact of the Directive on the extent of anti-corruption disclosures.

In the previous literature, it was clearly stated that the overall reporting quantity increased subsequent to a non-financial mandate (Damak-Ayadi, 2011; Kerret et al., 2010). With this in mind, we expect that the extent of non-financial disclosers will increase even in such a sensitive area as the fight against corruption. Taking into consideration the theoretical and empirical evidence, we put forward the following hypothesis:

H1: There is a positive relationship between Directive 2014/95/EU enforcement and the extent of anti-corruption disclosure.

Inclusion in the Respect Index

Participation in a particular CSR initiative, association or coalition can potentially result in coercive pressure being put on the company to undertake certain practices (Barkemeyer et al., 2015; Sari et al., 2020). This mainly includes international initiatives, such as the UN Global Compact, which promote corporate engagement with corruption as part of a wider array of CSR aspects. But this could potentially also apply to local and regional initiatives that may exert a positive influence on corruption-related reporting. A key example here is the Respect Index, which is the first index of companies respecting the CSR rules in the region of Central and Eastern Europe.

The Respect Index portfolio covers Polish companies listed on the WSE Main Market which operate in accordance with the highest standards of management with regard to corporate governance, reporting and investor relations standards, and which also include environmental, social and governance factors (Macuda et al., 2015). The participating companies are screened by the WSE and the Association of Listed Companies. If a company does not respond to coercive pressures from the project makers, its membership will be terminated. As transparency, accountability as well as communication with stakeholders are at the core of this project, we would expect that corporate inclusion in the Respect Index has a positive impact on anti-corruption disclosure. Previous studies document the statistically significant positive impact of inclusion in the Respect Index on non-financial disclosure practices, yet excluding ethical matters before the implementation of the Directive (Dumitru et al., 2017). Hence, we may hypothesise what follows:

H2: There is a positive relationship between inclusion in the Respect Index portfolio and the extent of anti-corruption disclosure.

State ownership

It is assumed that state ownership has a positive impact on CSR disclosures. The governments of most post-communist EU member states are struggling to address corruption effectively in their national regulations. In this regulated environment, governments have the potential to force companies to comply with anti-corruption laws and disclose their anti-corruption efforts. This coercive pressure is especially effective for companies whose capital structures are dominated by government shares. State-owned enterprises themselves are usually politically sensitive as their activities are more visible to the public, and there is a greater expectation that such companies will be aware of their public obligations (Muttakin & Subramaniam, 2015), in line with the tenets of coercive isomorphism.

Previous studies have shown inconsistent findings for this variable. A positively significant association between state ownership and the extent of CSR-related disclosures is quite well documented in the literature (Branco & Matos, 2016; Muttakin & Subramaniam, 2015). However, there are recent studies that show that state ownership is not a significant predictor of CSR disclosure (Matuszak et al., 2019), including anti-corruption disclosures (Sari et al., 2020). Bearing the above in mind, the following hypothesis has been developed:

H3: There is a positive relationship between state ownership and the extent of anti-corruption disclosure.

Foreign ownership

It is assumed that foreign ownership can influence CSR disclosure. According to Haniffa and Cooke (2005), foreign shareholders typically demand high-level corporate disclosure due to geographic separation. Moreover, a foreign shareholder is likely to be more interested in the company's global accountability, and in particular in how the company is trying to meet the expectations of the global community in relation to sustainable business practices, including anti-corruption practices and reporting (Sari et al., 2020). This is where coercive pressure from foreign shareholders can come into play. Foreign investors can push companies to report on anti-corruption activities and, by responding to this pressure, the companies may get continuous support and legitimacy from this stakeholder group in the form of capital inflows (Deegan & Unerman, 2011; DiMaggio & Powell, 1983).

Studies investigating the effects of foreign ownership on CSR disclosures in the context of an emerging economy are scant and provide unclear results. A positive association between foreign ownership and CSR disclosure practices is documented in some prior studies (Khan et al., 2013; Muttakin & Subramaniam, 2015; Sari et al., 2020). However, there are studies that found foreign ownership to have no statistically significant influence on CSR disclosure (Matuszak et al., 2019). Thus, the following hypothesis has been formulated:

H4: There is a positive relationship between foreign ownership and the extent of anti-corruption disclosure.

7.3. Research methodology

7.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.

3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company--year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial anti-corruption information were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

7.3.2. Variables

To quantify the disclosure on anti-corruption practices (dependent variable), the content analysis method was utilized. In order to measure the level of anti-corruption disclosures, based on the Directive's requirements, the existence of non-financial content items was examined, namely:

1. a description of the policies pursued by the undertaking in relation to anti-corruption,
2. a description of the outcome of anti-corruption policies,
3. a description of the principal risks related to anti-corruption,
4. a description of how the undertaking manages those risks related to anti-corruption.

If the content item was present in the management commentary or stand-alone CSR report, it scored 1, and 0 otherwise.

As the PAA as well as the Directive do not favour any content item over another, we treated each item as equally important, and we used the same binary scoring for each item. This approach allowed us to evaluate the extent of anti-corruption disclosure made by companies. Next, an anti-corruption disclosure index (AC) was computed according to the following formula:

$$\text{AC disclosure index} = \frac{\text{Sum of scores obtained by company}}{\text{4 (total number of content items)}}$$

Table 7.1 presents independent and control variables together with the measurement approach.

In terms of control variables, in line with previous studies (Blanc et al., 2017; Sari et al., 2020), this research employs the company size and industry type as control variables as these variables may influence anti-corruption disclosure practices.

Table 7.1. Description of independent and control variables

Variables	Description / measurement approach
Independent variables	
Directive 2014/95/EU (DIRECTIVE)	Dummy = 1 for 2017–2019, 0 for 2014–2016
Respect index (RESPECT)	Dummy = 1, if the company is listed in the Respect index, 0 otherwise
State owned enterprise (SOE)	Dummy = 1, if the State is a shareholder of the company, 0 otherwise
Foreign investor (FOREIGN)	Dummy = 1, if the company has at least one foreign shareholder having more than 5% of shares, 0 otherwise
Control variables	
Risky industry (RISKY_IND)	Dummy = 1, if the company is a member of a risky industry, according to the TI's Bribe Payers Index (Transparency International, 2019), namely: oil and gas, basic materials (including forestry and mining), defence, capital goods, construction, telecommunications and utilities sectors; 0 otherwise.
Company size (SIZE)	Value of assets in mln PLN

Source: Own elaboration.

7.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effects models (FE) and the random-effects model (RE), were used to model panel data in the study. All models were estimated with robust (HAC) standard errors. The proposed model is the following:

$$AC_{it} = \beta_0 + \beta_{1,it}DIRECTIVE + \beta_{2,it}RESPECT + \beta_{3,it}SOE +$$
$$+\beta_{4,it}FOREIGN + \beta_{5,it}RISKY\_IND + \beta_{6,it}SIZE + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test. According to Field (2018), the Wilcoxon signed-rank test is a non-parametric test that can be used in situations in which there are two sets of scores to compare, but these scores come from the same participants.

7.4. Empirical results and discussion

Descriptive statistics are presented in Table 7.2. Among Polish listed companies, the level of anti-corruption disclosures varies from the minimum level of 0 to the maximum level of 1. The average AC is 0.52, indicating that there is room for improvement in terms of the disclosure extent. Standard deviation of AC is 0.43, suggesting that there is high variability among Polish companies in terms of anti-corruption disclosure.

In Table 7.3, we compare the mean AC index and its components before and after the implementation of the Directive. The results indicate that in each case the change between the clustered years is statistically significant (p-value < 0.001). After the implementation of the directive, the AC index and all the components increased significantly (the mean increased by 203%, 196%, 218%, 208% and 190% respectively); however, the variability among the sample companies decreased, but only in relation to the AC index and the AC1 and AC2 components, which is reflected in a decrease in SD (31%, 58% and 36% respectively). In terms of AC3 and AC4, the variability increased (SD increased 22% and 31% respectively), which is an unexpected result. This result can be explained by indicating that before the Directive implementation companies did not disclose much information about anti-corruption issues in general. After the implementation of the Directive, in majority cases companies started reporting about anti-corruption policies and their outcomes (AC1 and AC2), but some of them do not treat their activity as exposed corruption, and thus do not identify the AC risks and how they mitigate those risks (AC3 and AC4).

Table 7.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
AC	426	0.00	1.00	0.52	0.50	0.43
AC1	426	0.00	1.00	0.64	1.00	0.48
AC2	426	0.00	1.00	0.60	1.00	0.49
AC4	426	0.00	1.00	0.44	0.00	0.50
AC5	426	0.00	1.00	0.39	0.00	0.49
RESPECT	426	0.00	1.00	0.33	0.00	0.47
SOE	426	0.00	1.00	0.20	0.00	0.40
FOREIGN	426	0.00	1.00	0.47	0.00	0.50
RISKY_IND	426	0.00	1.00	0.45	0.00	0.50
SIZE (mln)	426	97.08	348044.00	26289.55	2154.09	56276.81

Source: Own elaboration.

Table 7.3. Comparison of mean AC index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	AC		AC1		AC2		AC3		AC4	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.26	0.38	0.32	0.45	0.29	0.42	0.22	0.37	0.20	0.36
After implementation (2017–2019)	71	0.78	0.26	0.96	0.19	0.91	0.27	0.67	0.45	0.59	0.47
Change (%)		203	–31	196	–58	218	–36	208	22	190	31
Z		6.678		6.154		6.215		5.370		4.921	
p		<0.001		<0.001		<0.001		<0.001		<0.001	

SD – standard deviation; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

In order to verify the developed hypotheses, the panel data analysis was utilized. After running the necessary tests (*F*-test, Breusch-Pagan test, Wald test, Hausman's test) in order to choose the right model, the fixed-effects model with the time fixed effect (FE model 2) was selected as the most appropriate model for this research. Therefore, the results of the fixed-effects model 2 have been considered for further discussion about the implications of the study (Table 7.4).

Table 7.4. Estimated coefficients from panel data analysis covering years 2014–2019

AC (dependent variable)									
Independent variables	VIF	Pooled model		Fixed effects models				Random effects model	
		OLS		FE model 1		FE model 2		RE	
Directive	1.01	0.51	(10.73)***	0.52	(11.52)***	0.64	(14.01)***	0.51	(11.00)***
Respect	1.30	0.27	(3.78)***	0.06	(0.71)	0.04	(–0.50)	0.18	(2.79)***
SOE	1.42	0.1	(1.13)	0.18	(1.41)	0.14	(1.12)	0.16	(2.25)**
FOREIGN	1.30	–0.04	(–0.61)	0.11	(0.85)	0.11	(0.96)	–0.00	(–0.06)
RISKY_IND	1.32	0.03	(0.49)	–0.28	(–10.21)***	–0.18	(–5.50)***	0.04	(0.60)
SIZE	1.25	–0.00	(–0.39)	–0.17	(–2.21)**	–0.00	(–4.01)***	–0.00	(–1.00)
INTERCEPT		0.17	(2.42)**	1.63	(2.65)***	0.20	(2.90)***	0.17	(2.60)***
Firm fixed effects				YES		YES			
Year fixed effects						YES			
n		426		426		426		426	

Table 7.4 – cont.

AC (dependent variable)					
Independent variables	**VIF**	**Pooled model**	**Fixed effects models**		**Random effects model**
		OLS	**FE model 1**	**FE model 2**	**RE**
Adjusted R^2		0.47	0.58	0.60	
F-test			4.73***		
Breusch--Pagan test					134.02***
Wald test				21.13***	
Hausman's test			13.10**		

VIF – value inflation factor.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Source: Own elaboration.

According to the results, independent variables explained almost 60% of the variation in the dependent variable. The Directive (DIRECTIVE) was found to have a positive significant effect on AC ($b1 = 0.64$; *p*-value < 0.01), thus the first hypothesis (H1) is accepted.

The other independent variables, namely RESPECT, SOE, FOREIGN, have no statistically significant effect on AC, and thus the H2, H3 and H4 cannot be accepted.

In terms of control variables, the current results show that the size of the company (SIZE) and being a member of a risky industry (RISKY_IND) have a statistically significant and negative impact on AC ($b6 = –0.001$; *p*-value < 0.01; $b5 = –0.18$; *p*-value < 0.01, respectively).

7.5. Conclusions, limitations and future research agenda

This chapter has investigated anti-corruption reporting practices by looking at both the extent of anti-corruption disclosure and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory anti-corruption disclosure under the Directive. The examination indeed showed that the Directive enforcement is associated with the extent of anti-corruption disclosure. This extent increased significantly across all content items, namely anti-corruption policy, the outcome of this policy, the associated risks and their management, after the Directive implementation period. Hence, this finding supports institutional theory by providing empirical evidence of how companies responded to regulatory pressure in order to provide anti-corruption disclosure. Unexpectedly, other coercive variables, i.e. inclusion in the Respect Index, government ownership and foreign ownership, are not significant determinants of anti-corruption reporting. Thus, anti-corruption reporting practices in the Polish setting are therefore partially explained by coercive isomorphism.

This study makes at least two major contributions to the literature. Firstly, it examines the extent of anti-corruption reporting, a specific subset of CSR disclosure, which is rarely mentioned in the social accounting literature, although anti-corruption disclosure is very important as it reflects the role of accounting in the fight against corruption. Secondly, it provides a deeper understanding of the manifestation of coercive pressures related to anti-corruption reporting. In particular, our study contributes to the understanding of the impact of the Directive on anti-corruption disclosure practices by EU companies. In other words, it presents the contribution of accounting to the struggle against corruption.

Our research has important implications for governments because it reveals that companies have responded positively to the regulator's pressure by increasing anti-corruption disclosure. Our research suggests that, as a result of implementing the Directive, stakeholders should be provided with more complex information about company anti-corruption activities.

As with all research, there are limitations related to our study. Firstly, while the assumptions of the analysis made it possible to examine the extent to which companies report their anti-corruption commitment, the analysis did not allow us to shed light on their actual commitment to the anti-corruption efforts. Secondly, our study focuses on disclosure practices in one EU country, offering no insight into how companies from different EU countries would respond to the pressure of mandatory regulation in the area of anti-corruption.

These limitations open up some possibilities for future research. Firstly, future research could examine the link between the extent of anti-corruption disclosure and the actual level of corporate involvement in anti-corruption activities. Furthermore, the pressure from the enforced Directive 2014/95/EU could be investigated across multiple UE countries.

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Chapter 8

Corporate community involvement disclosure: The contribution of NFRD

8.1. Introduction

Corporate community involvement (CCI) is a distinct and unique type of a broad concept of corporate social responsibility (CSR) and has a long history of tangible involvements and interactions of corporations with the society in which they operate (Rehbein & Schuler, 2015).

Despite the fact that the community has been identified as an important and broadly conceived stakeholder group (Altman, 2000; Clarkson, 1995), the literature examining the impact of community pressure on corporate communications in non-financial reports is undeveloped.

Even after an increase in mistrust between corporations and societies in the aftermath of the global corporate misbehaviours, there remains a dearth of literature on corporate community involvement disclosure (CCID) (Yekini, Adelopo, & Adegbite, 2017).

Moreover, previous studies have tested different measures of public pressure on CCID (Yekini & Jallow, 2012), but so far they have not taken into account the pressure from mandatory accounting regulations. In recent years, it has become possible to study such pressures due to Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive, which requires large companies with an average of 500 or more employees to disclose non-financial information. Large listed companies need to disclose, among others, information on their social matters (community involvement). More specifically, for this matter, companies must disclose a description of their policy including the due diligence processes implemented, the outcomes of this policy, principal risks and their management on a “comply or explain” basis, with considered reasons for non-disclosure. Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018.

The motivation for this chapter is therefore to supplement this omission by analysing the mandatory CCID in Poland, a post-communist country in Central and Eastern Europe (CEE), which is among the EU countries that have transposed the Directive into their national laws. Since then, some Polish companies have been required to provide social disclosures.

This study adopts the lens of institutional theory, because due to the mandatory nature of the Directive transposed by the Polish regulator into the Accounting Act (AA, 2016), coercive isomorphism can be expected. It is therefore assumed that legislator pressure should have a significant impact on the extent of CCID.

Therefore, the research question posed by this chapter is whether or not CCID in non-financial reports is still a response to societal pressure to act on behalf of the members of that society, observed in studies on voluntary CCID, or whether such disclosures are merely motivated by the pressures on managers to comply with the regulations.

Consequently, the main objective of this chapter is to examine CCI reporting practices of Polish listed companies by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory CCID under the Directive.

In order to explore the research question, we have analysed CCID using content analysis for a sample of 71 companies listed on the Warsaw Stock Exchange (WSE). Our analysis shows that the extent of CCID across all content items increased significantly after the Directive implementation period compared to the period before the implementation. The highest increase can be observed in the non-financial risk disclosure and disclosures on the management of those risks. The findings reveal that the Directive enforcement is associated with the extent of CCID. Surprisingly, another coercive variable tested, i.e. public pressure, is not a significant determinant of corporate community involvement reporting.

Thus, the current chapter directly contributes to the rare literature on CCID, a unique type of CSR reporting. In particular, we assume that our study contributes to the understanding of the impact of the Directive on CCID, which reflects the role of accounting in serving as an impetus for companies to diminish their detrimental social consequences.

The rest of the chapter is organised as follows: the next section provides a brief review of the relevant literature and theoretical background, which helps to formulate our hypothesis, while section three describes the methodology employed. The results of the study are discussed in section four, while section five concludes the study.

8.2. Literature review, theoretical framework and hypothesis development

8.2.1. Literature review

CCID is a type of disclosure in non-financial reports showing actual corporate engagement in the life of the society and civic duties within the community in which a given company operates. Hence, CCI is far more than donation, sponsorship, philanthropic or charity activities. It is the commitment of significant amount of time and other resources of a company, such as money, equipment or infrastructure, human skills and expertise, to community projects (Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015; Yekini & Jallow, 2012). These projects are externally focused and include a wide range of social issues such as community poverty, educational deficits, human health and the community's overall quality of life. These projects could target vulnerable groups of society, e.g., humanitarian aid for victims of wars, terrorist attacks or natural disasters (Rehbein & Schuler, 2015; Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015; Yekini & Jallow, 2012). CCI differs from other types of corporate social responsibility (CSR), because while such initiatives may be driven by the need to remedy negative externalities arising from the company's operations, they differ in their altruistic motives (Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015). The historical roots of CCI also distinguish it from other CSR initiatives. In the aftermath of the Second World War, corporations encouraged by the US, UK and other governments moved from philanthropic efforts undertaken before the war to actual involvement in community development and social reconstruction after the war through corporate social actions (Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015; Yekini & Jallow, 2012).

Although researchers have noticed the uniqueness of CCI activities for some time, and studies on CCID have begun to emerge (Campbell et al., 2006; Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015; Yekini & Jallow, 2012), there is still a considerable gap in the literature on the nature of CCID.

The study by Campbell et al. (2006) was the first one to investigate CCID separately from the general CSR disclosure and found that the volume and frequency of CCID were positively associated with high public profile companies. In addition, the research supported a legitimacy-based explanation for the cross-sectional variability of community disclosures.

An earlier study on CCID by Yekini & Jallow (2012), employing a signalling framework, found that the volume of CCID has a significant association with its total quality score. Furthermore, the quality of CCID was found to be associated with the company size and corporate governance measures such as the audit committee size and board composition, and the existence of stand-alone CSR reports, while other measures of public pressure such as leverage, profitability and industrial sector were not statistically significantly related to the total quality score. The authors concluded that the pressure to disclose CCI does not come from economic stakeholders (debt holders), and therefore CCID is a response to societal pressure.

Another study by Yekini, Adelopo, Andrikopoulos et al. (2015), carried out through the lenses of stakeholder theory, indicated that companies with more outside directors, who are overwhelmingly community leaders in most large corporations, are likely to disclose higher quality information on their community activities than others. Moreover, the findings suggest that the quality of CCID responds to other corporate governance mechanisms, in particular the existence of the CSR committee.

Most recent study by Yekini, Adelopo and Adegbite (2017) used media agenda-setting theory to generate deeper insights into the role of the media in CCID and found a statistically significant positive relationship between community expectations and CCID.

Despite the above, previous studies have tested different measures of public pressure on CCID in different theoretical frameworks. They were limited to voluntary CCID only in UK companies and so far have not taken into account the institutional logic and the pressure from mandatory accounting regulations. Nevertheless, Matuszak and Różańska (2021) attempted to include an analysis of CCID within general non-financial disclosures and investigated the differences in the extent of non-financial disclosure across companies listed on the Warsaw Stock Exchange over the period surrounding the implementation of Directive 2014/95/EU. It is therefore imperative to extend this initial study over a longer period of time and go beyond non-parametric tests to understand the impact of the regulations on the unique CCID. Understanding this relation through the lenses of institutional theory is crucial, more so now than before, for the achievement of EU objectives, due to the forthcoming changes introduced by the EU in sustainability reporting, and CCID in particular.

Thus, this study examines CCI reporting practices of Polish listed companies by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory CCID under the Directive.

In order to address the above issues, the authors discuss institutional theory and develop hypotheses in the next sub-sections.

8.2.2. Theoretical framework

This study uses institutional theory introduced in the late 1970s by Meyer and Rowan (1977) as its conceptual framework because it provides an explanation of the behaviours and practices of an organisation. These practices may include CCID. Institutional theory assumes that organisations are greatly affected by the external environment and the institutional environment, such as legal regulations, culture, values as well as norms and social expectations (DiMaggio & Powell, 1983). Organisations are likely to change their behaviour and adopt appropriate practices to conform to the external environment and the institutional environment in order to obtain and maintain legitimacy (DiMaggio & Powell, 1983).

Within the framework of institutional theory, DiMaggio and Powell (1983) identified three conceptually different pressures that depend on diverse sources, i.e. coercive, normative and mimetic pressures. Coercive pressure is the informal and formal pressure exerted by powerful stakeholders such as governments, dominant suppliers and customers among others (DiMaggio & Powell, 1983). Thus, under the coercive pressure, an organisation adopts specific disclosure practices as a response to the pressures from influential stakeholders (Deegan, 2014; Deegan & Unerman, 2011).

In the CCID context, coercive pressure may be caused by a government regulator because regulators reflect pressure through, for example, law enforcement (DiMaggio & Powell, 1983), imposing requirements on companies and sanctions for non-compliance, as in the case of transposing the Directive into the national legislation of the EU member states.

Thus, institutional theory, and especially the coercive mechanism, has become a popular perspective in studies addressing the Directive (Dumitru et al., 2017; Matuszak & Różańska, 2021; Tarquinio et al., 2020; Tiron-Tudor et al., 2019).

It can be assumed that, in the current context of CCID, another source of coercive pressure may also be society as an influential stakeholder. It has long been recognised that the community should be seen as an important member of the stakeholder system that can disrupt the operation of a corporation (e.g. through sabotage or lack of patronage) if its expectations are not met (Clarkson, 1995). Nowadays, due to the growing public awareness of environmental and social rights, community expectations of corporations are greater than ever. At the same time, the community has more opportunities to put pressure on corporations.

To strengthen our contribution to the existing literature, this study does not only explore the pressure from regulators but also pressures from other possible coercive sources, in particular from the community.

8.2.3. Hypotheses development

This chapter investigates two key coercive variables potentially influencing the extent of CCID in Poland. These variables are Directive enforcement and public pressure.

Directive 2014/95/EU enforcement

The rationale for expecting the Directive to significantly affect CCID is that companies would be keen to follow new "norms" that are imposed upon them (Deegan, 2002). According to institutional theory, companies may strive to increase the insufficient and non-compliant level of CCID to reduce the regulatory pressure.

It should be noted that CCI began to gain importance in Poland as a unique type of the CSR concept only after the fall of communism in 1989, i.e. much later than in Western countries. Initially, organisations in Poland perceived CCI as charity, sponsorship and donations to social activities. In a later period, when non-financial disclosures were still voluntary in nature, organisations began to change their philanthropic approach to a more interactive one, often involving the voice of stakeholders (Matuszak & Różańska, 2020). CCID was predominantly featured in the information disclosed for 2015 among Polish listed companies. However, the disclosure in this area did not meet the requirements of the forthcoming European regulations on non-financial reporting in most cases (Matuszak & Różańska, 2017). Thus, hopes began to be pinned on the Directive regulations, which appear to be giving rise to a more substantial institutional logic — one that puts more emphasis on making non-financial reporting a socially meaningful business exercise (Albu et al., 2021). A preliminary study by Matuszak and Różańska (2021), using non-parametric tests, indicated that the extent of CCID increased between 2015 and 2017, thus having improved after the implementation of the Directive. It is therefore imperative to confirm the potential impact of the Directive on the extent of CCID, reinforcing the analysis with a longitudinal approach and statistical methods designed for panel data sets.

In the previous research, it was clearly stated that the overall reporting quantity increased subsequent to a non-financial mandate (Damak-Ayadi, 2011; Kerret et al., 2010). We expect that the extent of non-financial disclosure will increase in the area of CCI. Taking into account the theoretical and empirical evidence, we may hypothesise the following:

H1: There is a positive relationship between Directive 2014/95/EU enforcement and the extent of CCID.

Public pressure

According to Mitchell et al. (1997), the claims of a typical community group, i.e. a group which has a stakeholder relationship with the corporation, are urgent and legitimate but lack power. However, this group of stakeholders could also be moved into the definitive stakeholder group, i.e. a group which has power, if their urgent claims are adopted by the powerful stakeholders, e.g., the government, non-governmental organisations (NGOs), community leaders or the media.

Initially, the literature perceived community as a less significant, secondary stakeholder (Clarkson, 1995), but later the literature began to see the community as equal to the rest of the key stakeholders, having legitimate interests, theoretically derived from philosophical concepts such as the common good, moral ethics, freedom, fairness and justice (Freeman & Phillips, 2002).

This coercive group would require corporations to provide reports on their involvement in community development activities as evidence of concern for the interests of the community and as proof of compliance with the existing implied social contract.

The rationale for expecting public pressure to have a significant impact on CCID is that companies will meet the reporting expectations that have the support of influential stakeholders that cannot be ignored. Thus, according to institutional theory, companies may seek to increase transparency in disclosing non-financial information to reduce the social pressure.

Albu et al. (2021) documented that in recent years in Romania, civil society actors have steadily increased their power being very active in encouraging and expecting responsibility, transparency and accountability, with visible results. In other words, public pressure boosted social and environmental reporting. Yekini, Adelopo and Adegbite (2017) found a statistically significant positive relationship between the community expectations and CCID, which means that UK listed companies increased their CCID due to higher community expectations. Bearing the above in mind, the following hypothesis has been developed:

H2: There is a positive relationship between public pressure and the extent of CCID.

While testing the above hypotheses, we controlled for company-specific characteristics (size, profitability level and leverage level) and other variables (stand-alone non-financial report, existence of CSR committee) based on the literature, as presented below.

8.3. Research methodology

8.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:
1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial information were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

8.3.2. Variables

To quantify the disclosure on community involvement practices (dependent variable), the content analysis method was utilized. In order to measure the level of CCID, based on the Directive's requirements, the existence of non-financial content items was examined, including:

1. a description of the policies pursued by the undertaking in relation to CCI,
2. a description of the outcome of CCI policies,
3. a description of the principal risks related to CCI,
4. a description of how the undertaking manages those risks related to CCI.

If the content item was present in the management commentary or stand-alone CSR report, it scored 1, and 0 otherwise.

As the Accounting Act as well as the Directive do not favour any content item over another, we treated each item as equally important, and we used the same binary scoring for each item. This approach allowed us to evaluate the extent of CCID made by companies. Next, a CCID index was computed according to the following formula:

$$\text{CCID index} = \frac{\text{Sum of scores obtained by company}}{4\ \text{(total number of content items)}}$$

Table 8.1 presents independent and control variables together with the measurement approach.

Table 8.1. Description of independent and control variables

Variables	Description / measurement approach	References
	***Independent variable**s*	
Directive 2014/95/ EU (DIRECTIVE)	Dummy = 1 for 2017–2019, 0 for 2014–2016.	(Matuszak & Różańska, 2021)
Consumer proximity 1 (CP1)	Dummy = 1, if the company is a member of a particular sector (proximity to end-user), i.e. banks, construction, finance — other, food, insurance and retails; 0 otherwise	(Campbell et al., 2006; Yekini, Adelopo, & Adegbite, 2017)
Consumer proximity 2 (CP2)	Dummy = 1, if the company is a member of a service sector: banks, energy, hotels & restaurants, insurance, IT, media, services — other and telecom; 0 otherwise	(Branco & Rodrigues, 2008; Gavana et al., 2018) limited to service sector
	Control variables	
Leverage (LEVERAGE)	Total debt / total assets	(Yekini, Adelopo, & Adegbite, 2017)
PROFITABILITY	Return on sale = net profit / sale	(Yekini, Adelopo, & Adegbite, 2017)
Company size (SIZE)	Natural logarithm of total assets in million PLN	(Matuszak & Różańska, 2021; Matuszak et al., 2019)
Type of report (REPORT)	Dummy = 1, if the company discloses non-financial information in a stand-alone report; 0 if the company discloses non-financial information in the management commentary	(Matuszak & Różańska, 2021; Yekini & Jallow, 2012)
CSR committee (COMMITTEE)	Dummy = 1, if the company has a CSR committee; 0 otherwise	(Yekini, Adelopo, Andrikopoulos et al., 2015)

Source: Own elaboration.

In terms of control variables, in line with previous studies (Matuszak & Różańska, 2021; Yekini, Adelopo, & Adegbite, 2017; Yekini, Adelopo, Andrikopoulos et al., 2015; Yekini & Jallow, 2012), this research employs the company size, financial performance, leverage, existence of CSR committee and whether the company discloses non-financial information in a stand-alone report or in the management commentary. These control variables may influence community involvement disclosure practices.

8.3.3. Method of analysis

Three basic types of models, the pooled model (OLS), the fixed-effects models (FE) and the random-effects models (RE), were used to model panel data in the study. All models were estimated with robust (HAC) standard errors. The proposed model is as follows:

$$CCID_{it} = \beta_0 + \beta_{1,it} DIRECTIVE + \beta_{2,it} CP1 + \beta_{3,it} CP2 +$$
$$+ \beta_{4,it} LEVERAGE + \beta_{5,it} PROFITABILITY + \beta_{6,it} SIZE + \beta_{7,it} REPORT +$$
$$+ \beta_{8,it} COMMITTEE + \varepsilon_{it}$$

In this research, the significance of the differences between groups (clustered years) was tested using the Wilcoxon signed-rank test. According to Field (2018), the Wilcoxon signed-rank test is a non-parametric test that can be used in situations in which there are two sets of scores to compare, but these scores come from the same participants.

8.4. Empirical results and discussion

Descriptive statistics are presented in Table 8.2. Among Polish listed companies, the level of community involvement disclosures varies from the minimum level of 0 to the maximum level of 1. The average CCID is 0.62, indicating that there is room for improvement in terms of the disclosure extent. Standard deviation of CCID is 0.34, suggesting that there is high variability among Polish companies in terms of community involvement disclosure.

Table 8.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
CCID	426	0.00	1.00	0.62	0.50	0.37
CCID 1	426	0.00	1.00	0.79	1.00	0.41
CCID 2	426	0.00	1.00	0.77	1.00	0.42
CCID 3	426	0.00	1.00	0.52	1.00	0.50
CCID 4	426	0.00	1.00	0.41	0.00	0.49
DIRECTIVE	426	0.00	1.00	0.50	0.50	0.50
CP1	426	0.00	1.00	0.37	0.00	0.48

Table 8.2 – cont.

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
CP2	426	0.00	1.00	0.37	0.00	0.48
LEVERAGE	426	0.06	4.50	0.59	0.54	0.31
PROFITABILITY	426	–3.24	0.83	0.06	0.05	0.21
SIZE	426	11.48	19.67	15.13	14.58	2.07
REPORT	426	0.00	1.00	0.46	0.00	0.50
COMMITTEE	426	0.00	1.00	0.07	0.00	0.25

Source: Own elaboration.

In Table 8.3, we compare the mean CCID index and its components before and after the implementation of the Directive. The results indicate that in each case the mean change between the clustered years is statistically significant (p-value < 0.001). Before the implementation of the Directive, the risk issues reflected in CCID3 and CCID4 were reported to the slightest degree, compared with CCID1 and CCID2, which is the expected result. After the implementation of the directive, the mean of CCID index and all the components increased significantly (the mean increased by 73%, 41%, 67%, 87% and 157% respectively), and the variability among the sample companies decreased in relation to the CCID index and all its components (61%, 62%, 76%, 48% and 55% respectively). This result can be explained by indicating that the Directive implementation made the extent of community involvement disclosure more homogenous among the sample companies.

Table 8.3. Comparison of mean CCID index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	CCID		CCID1		CCID2		CCID3		CCID4	
		Mean	CV	Mean	CV	Mean	CV	Mean	CV	Mean	CV
Before implementation (2014–2016)	213	0.46	85.41	0.66	72.38	0.57	86.57	0.36	133.21	0.23	183.38
After implementation (2017–2019)	213	0.79	33.43	0.93	27.59	0.96	21.05	0.68	69.38	0.59	83.29
Change (%)		73	–61	41	–62	67	–76	87	–48	157	–55
Z		9.328		6.624		7.680		6.033		7.009	
p		<0.001		<0.001		<0.001		<0.001		<0.001	

CV – coefficient of variation is a measure of relative variability. It is the ratio of the standard deviation to the mean multiplied by 100%; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

Table 8.4. Estimated coefficients from panel data analysis covering years 2014–2019

ENV (dependent variable)													
Independent variables	VIF	Pooled model (a)		Fixed effects models (a)				Random effects model (b)					
		OLS		FE model 1		FE model 2		RE model 1		RE model 2		RE model 3	
DIRECTIVE	1.05	0.28	(6.94)***	0.29	(6.83)***	0.43	(9.1)***	0.28	(7.09)***	0.27	(7.02)***	0.28	(7)***
CP1[(c)]	1.92	0.03	(0.59)					0.02	(0.41)			0.02	(0.34)
CP2[(c)]	1.75	–0.07	(–1.17)							–0.06	(–1.05)	–0.06	(–1.01)
LEVERAGE	3.01	–0.31	(–3.31)***	–0.12	(–0.66)	–0.08	(–0.45)	–0.25	(–2.53)**	–0.23	(–3)***	–0.25	(–2.56)**
PROFITABILITY	2.21	–0.22	(–1.66)	–0.14	(–0.79)	–0.08	(–0.45)	–0.23	(–1.98)**	–0.21	(–2.14)**	–0.23	(–1.98)**
SIZE	2.04	0.09	(5.21)***	0.00	(–0.03)	–0.07	(–0.82)	0.08	(6.09)***	0.09	(5.07)***	0.09	(4.95)***
REPORT	1.07	0.21	(5.27)***	0.21	(5.05)***	0.21	(5.03)***	0.21	(5.5)***	0.21	(5.47)***	0.21	(5.46)***
COMMITTEE	1.05	0.11	(–3.55)***	0.17	(0.88)	0.12	(0.74)	0.14	(1.31)	0.13	(1.22)	0.14	(1.24)
INTERCEPT		–0.81	(–3.55)***	0.48	(0.36)	1.42	(1.05)	–0.66	(–3.6)***	–0.79	(–3.41)***	–0.77	(–3.25)***
Firm fixed effects				YES		YES							
Year fixed effects						YES							
n		426		426		426		426		426		426	
Adjusted R^{2}[(d)]		0.48		0.46		0.51		–		–		–	
F-test				4.13***									
Breusch-Pagan test												111.47***	
Wald test						33.53***							
Hausman's test												5.84	

[(a)] t-Statistics in brackets. [(b)] z-statistics in brackets. [(c)] Our key explanatory variables, i.e., CP1 and CP2, are time-invariant variables (constant over time) and their coefficients in the FE models cannot be estimated. According to Wooldridge (2013), if the key explanatory variable is constant over time, we cannot use the FE to estimate its effect on CCID, and we must rely on the RE (or pooled OLS) estimates. [(d)] R^2 cannot be reported for the RE because the RE estimator does not minimise the sum of squared residuals; VIF – value inflation factor.

$^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Source: Own elaboration.

In order to verify the developed hypotheses, the panel data analysis was utilized. After running the necessary tests (*F*-test, Breusch-Pagan test, Wald test, Hausman's test) in order to choose the right model, the random-effects model (RE) was selected as the most appropriate model for this research. Therefore, the results of the random-effects model were considered for further discussion about the implications of the study (Table 8.4). In our research, we use two variables — CP1 and CP2 — as a proxy of customer proximity. Therefore, we regressed three RE models: model 1 with variable CP1, model 2 with variable CP2 and model 3 with both variables in one model.

According to the results, the Directive (DIRECTIVE) was found to have a positive and significant effect on CCID in all three RE models. Thus, the first hypothesis (H1) is accepted. The other independent variables, i.e. CP1 and CP2, have no statistically significant effect on CCID in each of the three RE models; hence, the second hypothesis (H2) cannot be accepted. This result is in contrast with some of the notable findings in the literature (Branco & Rodrigues, 2008; Campbell et al., 2006; Gavana et al., 2018; Yekini, Adelopo, & Adegbite, 2017).

Almost all the control variables, except for COMMITTEE, have a statistically significant impact on CCID. In particular, the company's size and disclosing non-financial information in a stand-alone report were found to have a positive impact on CCID, which is in line with previous studies, e.g., Yekini and Jallow (2012) and Matuszak et al. (2019). Furthermore, we have found a statistically significant negative relationship between company leverage as well as company profitability and CCID. This result is consistent with an earlier study by Yekini, Adelopo and Adegbite (2017). However, this result is quite surprising, taking into account the fact that creditors are more likely to demand non-financial disclosures, including CCID, as they play the key roles in reorientation of capital flows towards a more sustainable EU economy (European Union, 2018). However, the possible explanation in favour of a negative relationship is that highly geared companies with lower profitability may tend to disclose less community information as debt holders are less likely to demand such disclosures. The study, however, found no support for the effect of the existence of the CSR committee on CCID.

8.5. Conclusions, limitations and future research agenda

This chapter has investigated CCI reporting practices of Polish listed companies by looking at both the extent and the coercive determinants of that extent, in particular the potential pressure from the regulator that requires mandatory CCID under the Directive. An examination indeed showed that the Directive enforcement is associated with the extent of CCID. This extent increased significantly across all content items, i.e. community involvement policy, the outcome of this policy, the associated risks and their management after the Directive implementation period. Hence, this finding supports institutional theory by providing empirical evidence of how companies responded to regulatory pressure in order to provide CCID. However, the study has found no significant support for community pressure and CCID relationship, thus offering partial support for the institutional theory argument. This might be interpreted to mean that community expectations as measured by proximity to the end-user are of little relevance when it comes to disclosing community involvement information in non-financial reports. It is mandatory regulations which seem to be the main motivation for CCID in non-financial reports.

This study makes at least two major contributions to the literature on non-financial reporting. Firstly, it examines the extent of community involvement reporting, i.e. a unique disclosure element in the non-financial reports of companies, which has received little attention in the subject literature. Secondly, it advances CCID research by providing an additional theoretical perspective — institutional theory — to the CCID debate. In particular, our study contributes to the understanding of the impact of the Directive on CCID practices by EU companies, which reflects the role of accounting in serving as an impetus for companies to diminish their detrimental social consequences. The move towards mandatory disclosure may increase the pressure to improve social engagement communication, and thus increase a company's incentive to be an active participant in its communities.

Our research has important implications for governments because it reveals that companies have responded positively to the regulator's pressure by increasing their CCID. Our research suggests that, as a result of implementing the Directive, stakeholders should be provided with more complex information about the company's interactions with a community.

As with most studies of this nature, there are limitations related to our study. Firstly, while the assumptions of the analysis made it possible to examine the extent to which companies report their community involvement, it did not allow us to shed light on their actual engagement in the life of the society. Secondly, our study focuses on disclosure practices in one EU country, while it gives no insight into how companies from different EU countries would respond to the pressure of mandatory regulation in the area of community involvement.

These limitations open up some possibilities for future research. Firstly, future research could examine the link between the extent of CCID and the actual level of corporate involvement in community projects. Furthermore, we believe that the framework developed in this research is quite effective and may be applied to other research across multiple EU countries.

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Chapter 9

Materiality of non-financial disclosure: The impact of NFRD

9.1. Introduction and research questions

Over the past decade, companies have faced increased institutional pressure to report more about their environmental and social impacts. In this context, multidimensionality of non-financial reporting is associated with greenwashing (Marquis et al., 2016), information overload (Wu & Pupovac, 2019) and decreased decision usefulness to stakeholders (Slack & Tsalavoutas, 2018). These issues mainly relate to voluntary non-financial reports, which have been criticised for their lack of material information, selective content and highlighting the positive aspects of corporate performance (Wensen et al., 2011). The call for a greater focus on materiality in this context is, therefore, considered an important — and possibly the most effective — remedy against these issues (Eccles & Krzus, 2015).

Among many key principles of non-financial reporting, materiality is the most significant and complex one. This principle represents the driver through which companies can identify and select issues that are essential to be included in non-financial reports, thus favouring the expectations and needs of all stakeholders (Global Sustainability Standards Board, 2018). The concept of materiality, in fact, acts as a filter to the voluminous data, while satisfying key stakeholders, and provides a balance on "selective reporting" and "mechanised reporting" (Zhou, 2011). In this way, the materiality principle may play an important role in non-financial reporting.

The materiality of disclosure is one of the fundamental principles of the non-financial reporting regime introduced by Directive 2014/95/EU (European Union, 2014), referred to as the Non-Financial Reporting Directive or the Directive. As Baumüller and Schaffhauser-Linzatti (2018) highlight, in designing the Directive, the EU commission acknowledged the importance of the materiality of disclosure to avoid information overload for stakeholders. However, in the context of these new reporting requirements, the concept of materiality is different from the existing definitions in the field of similar reporting practices. Furthermore, the presented concept is difficult to interpret due to the fact that there are different kinds of "materialities" to be found within the Directive itself.

According to the Directive, large companies (exceeding 500 employees) having headquarters in the member states are required to provide the so-called "non-financial statement". Companies were expected to comply with the new disclosure requirements of the locally transposed laws by 2018.

In this study, we refer to mandatory reporting and we ask how the Directive has impacted the materiality of non-financial reports provided by Polish listed companies. We focus on Poland as it has become one of the then 28 European Union (EU) countries that have transposed the Directive into their national legislation. Since then, non-financial statements are required among certain Polish enterprises by the Polish Accounting Act (AA, 2016).

Empirical studies on the materiality of reports in the context of reporting obligations are rare in the literature to date. Lakshan et al. (2022) investigate the challenges and techniques which the preparers of integrated reports use in order to determine the materiality of non-financial information. They have found that preparers use materiality disclosures as image-enhancing marketing tools, which causes concerns regarding weak accountability and a deviation from the International Integrated Reporting Council's objective of improving the quality of information. Several studies have found an increase in the overall non-financial reporting quality (Cisi et al., 2022; Fatima et al., 2015; Haji, 2013; Hąbek & Wolniak, 2016), including only one study (Hąbek & Wolniak, 2016) that used also relevance to proxy for reporting quality and documented that the legal obligation of non-financial disclosure (NFD) had a positive effect on the relevance of reports. However, this study compared voluntary reports with mandatory reports prepared in selected EU countries based on various national regulations in the field of non-financial reporting prior to the introduction of the Directive. Thus, it did not examine the effectiveness of the new regulations in relation to the materiality of NFD. Other studies found that a non-financial reporting mandate is associated with a decrease in quality (Pedersen et al., 2013), and some studies did not draw a conclusion in either direction (Dumitru et al., 2017).

These findings can be linked to institutional theory (DiMaggio & Powell, 1983), which provides ambiguous predictions concerning the potential consequences of mandatory non-financial reporting on materiality as well as the overall disclosure quality. According to this theory, companies' behaviour is shaped by institutional forces which homogenise companies' practices (DiMaggio & Powell, 1983), including the ones associated with NFD. This process called isomorphism is determined by coercive, mimetic and normative pressures. Due to the existence of various types of institutional isomorphism, there is uncertainty about how companies will behave after the introduction of new mandatory regulations.

On the one hand, legislative pressure (coercive isomorphism) causes companies to adapt to new standards, to gain social legitimacy, and thus to provide high-quality information. However, companies are not passive players against these forces, and institutional theorists acknowledge that there is resistance to institutional demands, and companies can even reject the institutional expectations (Oliver, 1991). For example, due to regulations, some companies may lose the opportunities to distinguish themselves on the market, and thus reduce the quality of the reports. Moreover, in some cases, companies with passive sustainability strategies may tend to meet the minimum requirements of the regulation (compliance). In this way, companies can try to reduce reporting costs by "ticking the box" instead of reporting the most important issues, and thus not focusing on quality. This is why coercive pressure can be a double-edged sword.

On the other hand, mimetic isomorphism suggests that the new mandatory regulations expose some companies to uncertainty about how to report under the new guidelines, causing these companies to imitate the reporting behaviour of their peers (e.g., more experienced in NFD) rather than disclosing information that is material to their stakeholders.

According to Gulenko (2018), some studies suggested such forces; however, more research is needed to understand the forces behind the companies' non-financial reporting behaviour in response to the new regulations. This call for new research is especially timely with regard to the materiality of the reports because there is almost no research in this area.

To bridge the gap in knowledge on the effects of mandate on the materiality of non-financial reports, the purpose of this chapter is to examine the effects of the Directive implementation on the materiality of NFD in Poland, a country that has introduced mandatory regulation on NFD for the first time.

To this purpose, it has been useful to analyse NFD before and after the new legislation entered into force. To examine NFD, we have used content analysis and developed a self-constructed materiality index applying the non-financial reporting regime introduced by the Directive.

The following three research questions are answered in the chapter:

RQ1. To what extent are non-financial reports material?
RQ2. Is there higher materiality of NFD because of the implementation of the Directive?
RQ3. What are the specific materiality differences between reporting in the pre- and post-implementation periods?

The results indicate that there is a statistically significant change in the materiality of NFD between the period before and after the implementation of the Directive among Polish listed companies. In general, the implementation of the Directive has increased the level of materiality of NFD, but there is still room for significant improvement, in particular in terms of providing materiality analysis, disclosing a strategic approach to material non-financial issues in business model and including non-financial key performance indicators relevant to a particular business.

Our study contributes to the literature by developing a unique measurement tool, i.e. a self-constructed materiality index, which applies the non-financial reporting regime introduced by the Directive. It also contributes to the understanding of the impact of the Directive on the materiality of NFD practices by EU companies. In addition, this research has practical implications for policy makers, companies and their stakeholders.

The remainder of the chapter is as follows: in Section 9.2, we analyse the concept of materiality according to the Directive requirements; Section 9.3 presents the sample selection and methodology; Section 9.4 refers to the empirical findings and discussion, while Section 9.5 presents the concluding remarks.

9.2. Materiality based on the requirements of NFRD and EU Guidelines

9.2.1. Overview

Despite the importance of the materiality principle in both accounting in general and non-financial reporting, the Directive fails to define, and even mention, the concept of materiality (La Torre et al., 2020). This is also clearly visible in EU Guidelines 2017/C215/01 on non-financial reporting issued in 2017 (European Commission, 2017). The intent of these Guidelines "is to provide balanced and flexible guidance on reporting non-financial information in a way that helps companies to disclose material information consistently and coherently". Despite the unclear legal status of these Guidelines and their non-binding nature, they add clarity to the reporting requirements of the Directive and use a different, in some cases clearer, wording which directly relates to the term "materiality". However, these Guidelines also illustrate that the concept of materiality is not consistently applied to all the requirements of the Directive, and that several "types" of materiality are used, although closely related to each other (Baumüller & Schaffhauser-Linzatti, 2018).

9.2.2. Materiality in the context of the general provision for non-financial reporting (the minimum content and materiality matrix)

Article 19a (1) of the Directive states:

> Large undertakings (…) shall include in the management report a non-financial statement containing information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters (…).

It shall be noted that the expression used in the Directive is "information (...) necessary for understanding (...)" and not "information material for (...)". However, regarding this regulation, the EU Guidelines formulate a key non-financial reporting principle called "disclose material information". To clarify this principle, the Guidelines refer to Article 2 (16) of Directive 2013/34/EU, thus linking materiality to the relevance of information for users in making decisions.

Taking the above into account, the regulation quoted in Article 19a (1) of the Directive addresses three components of information which could possibly qualify for being material:

1. Information necessary for understanding the company's development, performance and position.
2. Information necessary for understanding the impact of the company's activity.
3. Information relating in each case to certain matters specified in the Directive.

Point 3 refers to material information on certain categories of issues that are clearly reflected in the Directive and should be disclosed as a minimum. These include: environmental, social and employee matters; respect of human rights; anti-corruption and bribery matters. The EU Guidelines explain that this set of issues refers to the breadth of information disclosed. However, the depth of the information reported on a particular issue depends on its materiality. This means that the materiality of the information set is determined by points 1 and 2.

Point 1 relates directly to the general provisions for the management report and links the reporting requirements of Article 19a (1) to a strong financial perspective. Companies are required to report information that is relevant to their assets, liabilities, financial position and profit or loss. Thus, in this case, the materiality analysis is based on an outside-in approach. It reflects how certain issues "effect" the company, and consequently, these issues are material depending on their ability to "make such effects" (Baumüller & Schaffhauser-Linzatti, 2018).

Point 2 introduces the new element to be taken into account when assessing the materiality of non-financial information, namely the impact of the company's activity. This element is specific to the sustainability reporting according to the GRI standards, referring to the perspective of the company's stakeholders. In this context, GRI 101: Foundation 2016 (Clause 1.3) addresses the following understanding of materiality: "Relevant topics, which potentially merit inclusion in the report, are those that can reasonably be considered important for reflecting the organisation's economic, environmental and social impacts, or influencing the decisions of stakeholders." Thus, two dimensions are distinguished, both of which can induce materiality independently: "influence" and "stakeholders". The combination of these two dimensions results in the so-called materiality matrix. This is the outcome of the materiality analysis, the process by which a company determines and prioritises its relevant aspects and topics that need to be included in the sustainability report (Bellantuono et al., 2016). It is based on a list of topics that are potentially relevant, identified, e.g. using interviews or checklist approaches. Thus, in this case, the materiality analysis is characterised by an inside-out approach. Topics are material if they reflect the impact of the reporting organisation on its stakeholders and the concept of sustainability as a whole (Baumüller & Schaffhauser-Linzatti, 2018).

9.2.3. Materiality in the context of non-financial KPIs

Article 19a (1) (e) of the Directive requires the presentation of "non-financial key performance indicators relevant to the particular business" in the non-financial report. The EU Guidelines explain that the non-financial statement should contain material narratives and disclosures based on metrics commonly known as key performance indicators (KPIs). Furthermore, the EU Guidelines encourage companies to disclose material KPIs, both general and sectoral (European Commission, 2017).

The requirement to present material KPIs relates to the matters included in the minimum content (in section 2.2). Additionally, as the EU Guidelines add, a company needs to disclose KPIs that are necessary to understand its development, performance, position and the impact of its activity.

To meet this reporting requirement, first, a company needs to identify the material matters. Second, a company needs to identify possible non-financial KPIs for each of these matters, usually using a checklist approach. For each matter, the relevance of KPIs may differ. Thus, a company subsequently needs to judge the materiality of these possible KPIs for the financial and stakeholder perspectives.

The materiality principle is expected to limit the number of KPIs to a reasonable amount. However, the wording of Article 19a (1) (e) also suggests that each matter is to be supported by at least one KPI.

9.2.4. The role of stakeholder identification in the materiality analysis

The EU Guidelines outline the crucial role of stakeholder identification in the application of the materiality principle in non-financial reporting. They highlight that companies are expected to consider, as can be guessed, in the materiality process, the information needs of all relevant stakeholders. Companies should focus on the information needs of the stakeholders as a collective group, and not on the needs or preferences of individual or atypical stakeholders or those with unjustified information demands. Where relevant, this may include, but is not limited to: investors, employees, consumers, suppliers, customers, local communities, public authorities, vulnerable groups, social partners and civil society (European Commission, 2017).

The materiality analysis is designed to meet the information needs of the company and its stakeholders, and in this respect it is more effective if it can understand and capture the needs of the company's stakeholders. Proper understanding of these needs is essential to the effectiveness of non-financial reporting. This can explain the importance of the stakeholder identification process in the shift towards more material non-financial disclosure. A previous quantitative analysis conducted by Torelli et al. (2020) has shown that stakeholder engagement plays a fundamental role in the report production process, particularly in the materiality analysis itself.

It is not surprising then that the EU Guidelines recommend companies to provide material information on their engagement with relevant stakeholders, and how their information needs are taken into account.

9.2.5. Materiality and business model (strategy and objectives)

Article 19a (1) (a) of the Directive requires the presentation of "a brief description of the undertaking's business model" in the non-financial report. The EU Guidelines add that this includes the company's strategy and objectives. Disclosures should provide insight into the strategic approach to relevant non-financial matters and explain the short, medium and long-term consequences of the information reported. Targets and benchmarks can be presented qualitatively or quantitatively. Where appropriate, companies may disclose material information based on scientific scenarios (European Commission, 2017). The new approach to materiality must focus on what is important to the business. But it needs to do so with a broader perspective capturing a long-term view of the problems that could affect the success of its strategy.

9.2.6. Materiality and consistency with other elements of the management reports

The materiality concept is expected to make the non-financial statement consistent with other elements of the management report. According to the EU Guidelines, a clear link between the information provided in the non-financial report and the other information disclosed in the management report makes the information more useful, relevant and cohesive (European Commission, 2017).

9.3. Research design

9.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The data concerning employment, assets and income were obtained from the Notoria Service Database. The data concerning non-financial materiality information were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

9.3.2. Non-financial materiality index

To quantify the materiality of NFD, the content analysis method was utilized. Following the Directive and its Guidelines (European Commission, 2017) analysed in Section 9.2, we examined the existence of selected materiality items presented in Table 9.1.

Table 9.1. NFD materiality index and its components

Materiality items:			**Measurement approach**
MI1	Materiality matrix		1 = inclusion of materiality analysis with materiality matrix as part of the non-financial report; 0 = otherwise
MI2	Non-financial KPIs		1 = inclusion of non-financial KPIs relevant to particular business; 0 = otherwise
MI3	NFD material matters sub-index (MMI)	Description of environmental matters	1 = existence of chapter or point about environmental matters; 0 = otherwise
MI4		Description of employee matters	1 = existence of chapter or point about employee matters; 0 = otherwise
MI5		Description of human rights matters	1 = existence of chapter or point about human rights matters; 0 = otherwise
MI6		Description of social matters	1 = existence of chapter or point about social matters; 0 = otherwise
MI7		Description of anti-corruption and bribery matters	1 = existence of chapter or point about anti-corruption and bribery matters; 0 = otherwise
MI8	Sustainability strategy		1 = inclusion of the strategic approach to relevant non-financial matters in business model; 0 = otherwise
MI9	Targets for future		1 = inclusion of targets for future with explanation of short-term, medium-term and long-term implications of NFD; 0 = otherwise
MI10	Stakeholder's identification		1 = existence of stakeholder's identification; 0 = otherwise
MI11	Consistency with other elements of management reports		1 = clear links between information presented in non-financial statement and other information disclosed in management report; 0 = otherwise

Source: Own elaboration.

Each materiality item in each company was granted points separately. If the materiality item was present in the management commentary or stand-alone CSR report, it scored 1, otherwise is scored 0. This approach allowed us to evaluate the selected materiality items for each company. As MI3-MI7 reflects the minimum content of material matters required by the Directive, we clustered them and computed an NFD material matters sub-index according to the following formula:

$$\text{NFD material matters sub-index (MMI)} = \frac{\text{M13 + M14 + M15 + M16 + M17}}{\text{5 (total number of materiality items MI3 – MI7)}}$$

Next, an NFD materiality index (MI) was computed according to the following formula:

$$\text{NFD materiality index} = \frac{\text{M1 + M2 + M3 + M4 + M5 + M6 + M7 + M8 + M9 + M10 + M11}}{\text{11 (total number of materiality items)}}$$

9.3.3. Method of analysis

In this research, the significance of the differences between the clustered years was tested using the Wilcoxon signed-rank test, which is a non-parametric test that can be used in situations in which there are two sets of scores to compare, but these scores come from the same participants.

9.4. Empirical results and discussion

Descriptive statistics are presented in Table 9.2. Among the sample companies, the level of MI varies from the minimum level of 0.09 to the maximum level of 1. The average MI is 0.58, indicating that there is room for improvement in terms of disclosure of material non-financial information. Standard deviation of MI is 0.31, suggesting that there is high variability among Polish companies in terms of disclosure of material non-financial information. The highest mean values are for MI3-MI7 (0.92, 0.81, 0.69, 0.83, 0.65, respectively), indicating that the level of material content matters in the sample companies is relatively high.

According to Figure 9.1, all materiality items have increased over the years under analysis, which is a positive trend. Moreover, the increase within the period before the implementation of the Directive is visibly lower, compared with the increase after the implementation. This suggests that the implementation of the Directive could have a positive impact on the materiality of non-financial information. This initial conclusion is confirmed when we take into consideration the results of further analysis presented in Figure 9.2. The results indicate

Table 9.2. Descriptive statistics

Materiality items	*n*	Minimum	Maximum	Mean	Median	Standard deviation
MI	426	0.09	1.00	0.58	0.64	0.31
MI1	426	0.00	1.00	0.27	0.00	0.44
MI2	426	0.00	1.00	0.39	0.00	0.49
MI3	426	0.00	1.00	0.92	1.00	0.27
MI4	426	0.00	1.00	0.81	1.00	0.39
MI5	426	0.00	1.00	0.69	1.00	0.46
MI6	426	0.00	1.00	0.83	1.00	0.37
MI7	426	0.00	1.00	0.65	1.00	0.48
MI8	426	0.00	1.00	0.21	0.00	0.41
MI9	426	0.00	1.00	0.54	1.00	0.50
MI10	426	0.00	1.00	0.50	1.00	0.50
MI11	426	0.00	1.00	0.52	1.00	0.50

Source: Own elaboration.

that there is a significant difference between the mean MI before and after the implementation of the Directive. In order to assess the statistical significance of the changes between the clustered years before and after the implementation of the Directive for the MI and all materiality items, the Wilcoxon signed-rank test was utilized. As presented in Table 9.3, the Wilcoxon test showed statistically significant differences between the MI before and after the implementation of the Directive ($Z = 6.89$, p-value < 0.001). Moreover, the variability of disclosure

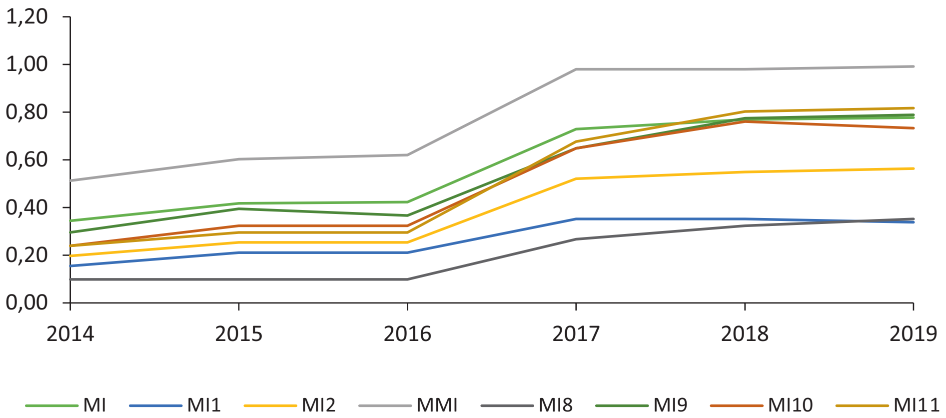

Figure 9.1. Share of companies disclosing selected materiality items across the years under analysis

Source: Own elaboration.

Table 9.3. Comparison of mean NFD materiality index and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	MI		MI1		MI2		MMI		MI8		MI9		MI10		MI11	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.38	0.22	0.18	0.26	0.23	0.32	0.56	0.23	0.10	0.23	0.34	0.36	0.28	0.31	0.26	0.28
After implementation (2017–2019)	71	0.76	0.16	0.35	0.46	0.54	0.48	0.98	0.06	0.31	0.45	0.74	0.41	0.71	0.42	0.77	0.36
Change (%)		100	–31	90	76	142	51	76	–72	219	96	115	12	154	36	197	28%
Z		6.89		2.09		3.93		7.11		3.31		5.17		5.27		6.10	
p		<0.001		<0.001		<0.001		<0.001		<0.001		<0.001		<0.001		<0.001	

SD – standard deviation; Z – Wilcoxon signed-rank test statistics; p – p-value.

Source: Own elaboration.

of material non-financial information decreased, which is a positive trend (MI standard deviation decreased by –31%). In terms of the materiality items, the Wilcoxon signed-rank test confirmed the statistical significance of the differences between the clustered years for all the MI components. The highest increase is observed around MI8 (219%) and the lowest around MMI (76%). Therefore, it can be noted that the implementation of the Directive positively influenced the materiality of non-financial reports.

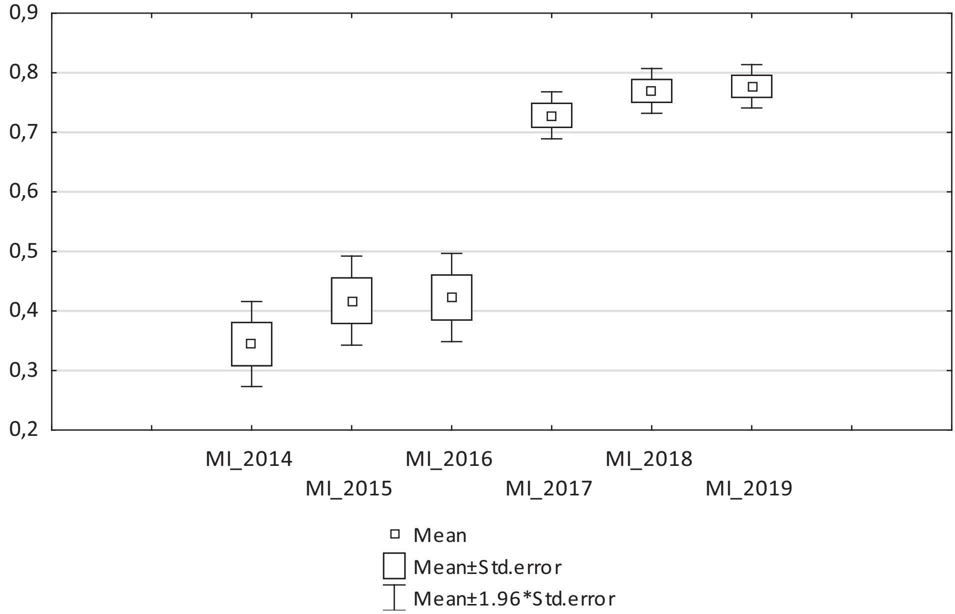

Figure 9.2. Comparison of mean MI across the years under analysis

Source: Own elaboration.

9.5. Conclusions, limitations and future research agenda

The principle of materiality can play an important role in non-financial reporting by countering information overload and greenwashing.

In this chapter, focusing on the evaluation of the materiality of NFD in Poland over the period surrounding the implementation of the Directive, we have investigated whether making non-financial disclosures obligatory may affect their materiality.

We have found that the NFD of Polish WSE companies are increasingly material and that the Directive has significantly increased its materiality. However, there is still room for improvement, in particular in terms of providing the materiality analysis, disclosing the strategic approach to material non-financial issues in business model and including non-financial key performance indicators relevant to the particular business. Hence, this study supports institutional theory, and especially coercive isomorphism in the form of regulatory pressure. However, this pressure is not very strong because companies are still resisting it.

Our study has important theoretical and practical implications. It contributes to the non-financial disclosure literature. First, we have developed a self-constructed materiality index applying the non-financial reporting regime introduced by the Directive. Our framework conceives materiality as a multidimensional construct, consisting of various types of materiality resulting from the analysis, contextualisation and interpretation of the relevant sections of the Directive and the EU Guidelines. Second, our study contributes to the understanding of the potential impact of the Directive on the materiality of NFD practices by EU companies. Third, it adds to widen the empirical research aiming to investigate the materiality of NFD in the mandatory context.

This research has also implications for policy makers, companies and their stakeholders. First, it has revealed that mandatory regulations are a crucial instrument for policy makers in improving the materiality of NFD. It has also shown that there is a scope for the national government to introduce further guidance for companies to ensure higher materiality of NFD, leading to higher quality of disclosures. Second, our assessment tool created for measuring the materiality of non-financial reports can also help those companies that are willing to self-assess their non-financial reports and/or improve their reporting processes. Third, our research suggests that, as a result of implementing the Directive, stakeholders should be provided with more material information.

Our research has several limitations that should be noted. The Directive is not the only factor affecting the materiality of NFD. There may be other institutional forces impacting the materiality of NFD, especially mimetic isomorphism. Moreover, the impact of the Directive on non-financial reporting of companies from other EU countries may be potentially different. Future research should consider extending our research along each of the above-mentioned limitations.

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Chapter 10

Reliability of non-financial disclosure: The impact of NFRD

10.1. Introduction and research questions

There is growing global stakeholder pressure for reliable non-financial disclosures (NFD) provided by companies. Nowadays, we can observe that the number of non-financial reports or CSR reports increases; however, their quality and, in particular, reliability is different. These reports do not always provide stakeholders with expected information, which, in turn, rises reliability problems such as lack of comparability of information or difficulties with the evaluation of NFD. These problems are getting worse as there is still no single, commonly accepted standard according to which NFD should be developed (Hąbek, 2013).

The above-mentioned NFD quality problems motivated the European Union (EU) to issue Directive 2014/95/EU, referred to as the Non-Financial Reporting Directive (NFRD) or the Directive, which has been transposed into law for all the EU Member States, with the objective to "increase investors' and consumers' trust" (European Union, 2014). According to the Directive, large public interest entities and groups should issue a non-financial statement, disclosing the main corporate non-financial information to their stakeholders, i.e. "information to the extent necessary for an understanding of the undertaking's development, performance, position and impact of its activity, relating to, as a minimum, environmental, social and employee matters, respect for human rights, anti-corruption and bribery matters, including: (a) a brief description of the undertaking business model; (b) a description of the policies pursued by the undertaking in relation to those matters; (c) the outcome of these policies; (d) the principal risks related to these matters including how the undertaking manage those risks; (e) relevant non-financial key performance indicators" (Matuszak & Różańska, 2017).

In this study, we refer to mandatory reporting and we ask how the Directive has impacted the reliability of non-financial reports provided by the Warsaw Stock Exchange (WSE) companies?

Research on the reliability of reports in the context of reporting obligations is at a nascent stage in the literature. Several studies have found an increase in the overall non-financial reporting quality (Damak-Ayadi, 2011; Fatima et al., 2015; Frost, 2007; Haji, 2013; Hąbek & Wolniak, 2016; Mazzotta et al., 2020; Mion & Loza Adaui, 2019; Schröder, 2022). However, only four of them (Hąbek & Wolniak, 2016; Mazzotta et al., 2020; Mion & Loza Adaui, 2019; Schröder, 2022) used credibility to proxy the for reporting quality. Hąbek and Wolniak (2016) documented that the legal obligation of NFD has a positive effect on the credibility of reports in selected EU countries prior to the introduction of the Directive. Similarly, Mion and Loza Adaui (2019) showed statistically significant differences for the dimension of credibility of reports in Italian and German companies after the implementation of the Directive. Other studies found that a non-financial reporting mandate is associated with a decrease in quality (Pedersen et al., 2013; Vormedal & Ruud, 2009) and some studies showed inconclusive results (Dumitru et al., 2017; Lock & Seele, 2016), including only one study that focused entirely on credibility (Lock & Seele, 2016). Lock and Seele (2016) operationalised the credibility of reports through four aspects, i.e. truth, sincerity, appropriateness and understandability. They fund that the regulatory context did not impact the reporting credibility of European companies. Mandatory reporting of CSR in France and Spain did not consistently benefit reporting credibility. Schröder (2022) operationalised the credibility of the non-financial reports by accuracy, balance, clarity, comparability, timeliness, rating and indexing. The study examined German banks in the timeframe of 2018–2020 and found that the annual quality scores for the relevance of information were higher than the scores for the credibility of information. Regarding the credibility category, the highest reporting quality was achieved for clarity, whereas balanced information and external ratings or indexing were assigned the lowest reporting quality. In each case, the score was below the average.

These findings can be linked to institutional theory (DiMaggio & Powell, 1983) that provides ambiguous predictions concerning the potential consequences of mandatory non-financial reporting on reliability as well as the overall disclosure quality. According to this theory, companies' behaviour is shaped by institutional forces which homogenise companies' practices (DiMaggio & Powell, 1983), including the ones associated with NFD. This process called isomorphism is determined by coercive, mimetic and normative pressures. Due to the existence of various types of institutional isomorphism there is uncertainty about how companies will behave after the introduction of new mandatory regulations.

On the one hand, legislative pressure (coercive isomorphism) causes companies to adapt to new standards, to gain social legitimacy, and thus to provide high-quality information. However, companies are not passive players against these forces, and institutional theorists acknowledge that there is resistance to institutional demands and companies can even reject the institutional expectations (Oliver, 1991). For example, due to regulations some companies may lose the opportunities to distinguish themselves on the market, and thus reduce the quality of the reports. Moreover, in some cases, companies with passive sustainability strategies may tend to meet the minimum requirements of the regulation (compliance). In this way, companies can try to reduce reporting costs by "ticking the box" instead of providing reliable reports, and thus not focusing on quality. This is why coercive pressure can be a double-edged sword.

On the other hand, mimetic isomorphism suggests that the new mandatory regulations expose some companies to uncertainty about how to report under the new guidelines, causing these companies to imitate the reporting behaviour of their peers (e.g., more experienced in non-financial reporting) rather than disclosing information that can build trust among their stakeholders.

According to Gulenko (2018), some studies suggested such forces; however, more research is needed to understand the forces behind the companies' non-financial reporting behaviour in response to the new regulations. This call for new research is especially timely with regard to the reliability of the reports because there is little research in this area.

To bridge the gap in knowledge on the effect of the reliability mandate of non-financial reports, the purpose of this chapter is to examine the impact of the Directive implementation on the reliability of NFD in Poland, a country that has introduced mandatory regulation on NFD for the first time. To address this purpose, we have used the content analysis method and examined NFD of 71 Polish companies listed on the WSE, for the years 2014–2019, to construct an NFD reliability index. The results indicate that there is a statistically significant change in the reliability of NFD between the period before and after the implementation of the Directive among Polish listed companies. In general, the implementation of the Directive has increased the level of reliability of NFD, but there is still room for significant improvement, in particular in terms of the comparisons in time and between entities as well as the external assurance of NFD. To the best of our knowledge, this study is the first one to investigate the impact of mandatory regulation on the reliability of NFD in Poland.

We assume that our study contributes to the understanding of the potential impact of the Directive on the reliability of NFD practices by EU companies. This research has important implications for policy makers since it reveals that mandatory regulations are a crucial instrument in improving the reliability of NFD. Our research suggests that, in order to improve the reliability of NFD, regulations should go further and, at least, expect NFD to be externally assured. Stakeholders that will be provided with more reliable NFD could be encouraged to use it in their decision-making processes to a greater extent.

The remainder of the chapter is as follows: in Section 10.2, we analyse the concept of reliability according to the Directive and EU Guidelines; Section 10.3 presents the sample selection and methodology. Section 10.4 refers to the empirical findings and discussion, while Section 10.5 presents the concluding remarks.

10.2. Reliability of information required by NFRD and EU Guidelines

10.2.1. Overview

As mentioned above, the main objective of the Directive is to "increase investors' and consumers' trust". According to Cambridge dictionary (2020), trust means "to believe that someone is good and honest and will not harm you, or that something is safe and reliable". This definition indicates specific features of trust which are being safe and reliable. Relating this feature to information, we could say that if non-financial information is aimed at rebuilding investors' and consumers' trust, it should be safe and reliable. In this sense, the reliability of non-financial information is a central point of the Directive and, at the same time, its final goal. Despite the importance of the reliability feature for both accounting in general and non-financial reporting, the Directive fails to define, or even mention, the feature of reliability.

Following Article 2 of the Directive, the European Commission prepared non-binding guidelines on the methodology for reporting non-financial information, including non-financial KPIs, general and sectoral, with a view to facilitating relevant, useful and comparable disclosure of non-financial information by undertakings. The Guidelines refer to the expected quality of NFD, indicating principles / dimensions that should be followed in order to build reliable non-financial information. EU Guidelines 2017/C215/01 on non-financial reporting were issued in 2017 (European Commission, 2017). Despite the unclear legal status of these Guidelines and their non-binding nature, they add clarity to the reporting requirements of the Directive and use a different, in some cases clearer, wording which directly and indirectly relates to the term 'reliability feature'. In this research, we have used content analysis and developed a self-constructed NFD reliability index applying the non-financial reporting regime introduced by the Directive and based on the EU Guidelines.

In order to develop the NFD reliability index, we have analysed the guidelines and checked where the regulator refers to the reliability issue. Based on the analysis, we selected reliability items which were included to our NFD reliability index.

The previous literature employed various methods to assess the reliability of non-financial reports. For example, Lock and Seele (2016) as well as Mazzotta et al. (2020) operationalised credibility based on Habermas' theory of communicative action. They used four constructs, namely understandability, being a precondition of credibility, truth, sincerity and appropriateness. Mion and Loza Adaui (2019) measured the credibility index based on seven components: adoption of sustainability reporting guidelines, evidence of independent verification or assurance, evidence of stakeholder engagement, description of instruments used for stakeholder engagement in sustainability reporting process, availability of quantitative data about sustainability expenditures as well as performance and inclusion of materiality analysis as part of the sustainability report. Furthermore, Hąbek and Wolniak (2016) measured the credibility index based on six categories, such as: readability, basic reporting principles, quality of data, stakeholder dialogue outcomes, feedback and independent verification. None of the above-mentioned research used the Directive requirements to proxy for the reliability.

10.2.2. Reliability and understandability

Point 3.2 relates to the "Fair, balanced and understandable" principle which is mostly linked with the reliability issue. First, it should be stressed that the Guidelines place understandability together with fairness. This logic is fully supported by the communication theory where understandability has a special place in the credibility concept — it is a necessary precondition to enter discussions on credibility (Lock & Seele, 2016). In this context, we can state that, in order to be reliable, non-financial information shall be understandable first. The Guidelines indicate the ways how to enhance the understandability of non-financial information. The suggested activities are as follows:

- using plain language and consistent terminology, avoiding boilerplate, and, where necessary, providing definitions for technical terms,
- explaining key internals of the information disclosed, such as measurement methods, underlying assumptions and sources,
- disclosing both qualitative and quantitative information. While quantitative information may be effective in reporting some non-financial issues (KPIs, targets, etc.), qualitative information provides context and makes the non-financial statement more useful and easier to understand. A combination of narrative reporting, quantitative information and visual presentation supports (graphs, diagrams, charts, etc.) effective and transparent communication. According to the study by Helfaya et al. (2019), the preparers and users

of a company's environmental report perceived the use of visual tools as one of the most significant dimensions/features of reporting quality.

In this research, according to the Guidelines, understandability is proxied by three variables: (1) availability of visual presentations about NFD (visual tools), (2) evidence that information uses plain language and consistent terminology, avoiding boilerplate, and, where necessary, providing definitions for technical terms (readability), (3) availability of the description of measurement methods, underlying assumptions and sources (quality of data).

10.2.3. Reliability and being fair

Point 3.2 of the EU Guidelines indicates that non-financial information can be made fairer and more accurate through, e.g.:

- appropriate corporate governance arrangements (e.g., certain independent board members or a board committee entrusted with responsibility over sustainability and/or transparency matters),
- robust and reliable evidence, internal control and reporting systems,
- effective stakeholder engagement and
- independent external assurance.

According to a report by Irwin and McGill (2018), users of non-financial information (in particular investors) want to have confidence in its reliability. The key element that contributes to their confidence, among others, is external assurance. When the information is assured by an independent third party, users can have more confidence in this information, although it may not necessarily change how they use it. Moreover, the third party's expert view can influence the perception of the management and the board in terms of their attitude and approach to control, risk management and governance.

In this research, according to the Guidelines, being fair is proxied by the evidence that non-financial information is externally assured.

10.2.4. Reliability and comparability

Point 3.6 of the EU Guidelines indicates that the content of the non-financial report should be consistent over time. This enables users of information to understand and compare past and present changes in the company's development, position, performance and impact, and relate reliably to forward-looking information (European Commission, 2017). Furthermore, the EU Guidelines highlight that consistency in the choice and methodology of KPIs is important to ensure that the non-financial statement is understandable and reliable. KPIs should be used consistently from one reporting period to the next one in order to provide reliable information on progress and trends. In this context, the existence of in-time comparisons should enhance reliability of non-financial information since it increases users' understanding of particular phenomena and supports them in drawing better conclusions.

In this research, comparability is proxied by the availability of comparisons in time in NFD (consistent over time).

10.3. Research design

10.3.1. Research sample and data collection

Our initial sample comprised all companies listed on the WSE. To be included in the sample, companies had to meet the following criteria:

1. They had to be Polish companies (ISIN — PL).
2. They had to be experienced in non-financial reporting at least in 2014.
3. They had to fulfil the criteria imposed by the transposed Directive concerning employment, assets and income for the period of 2017–2019.
4. They needed to have the required data for 2014–2019.

The final study sample was composed of 71 Polish companies (426 company-year observations).

The collected data are grouped in two categories: (1) data concerning employment, assets and income comprised of the absolute values, and (2) non-financial reliability data used to calculate the statistics. The data from the first group were obtained from the Notoria Service Database. The data from the second group were hand-collected from non-financial statements being a separate section of the management commentary (not stand-alone) or being a separate stand-alone report. In order to verify the developed hypotheses, our time scope is 2014–2019 and it covers the period before (2014–2016) and after (2017–2019) the implementation of the Directive.

10.3.2. Non-financial reliability index

To quantify the reliability of NFD, the content analysis method was utilized. Following the Directive's guidelines (European Commission, 2017), we examined the existence of selected reliability items presented in Table 10.1.

Each reliability item, in each company was granted points separately. If the reliability item was present in the management commentary or stand-alone CSR report, it scored 1, otherwise is scored 0. In order to decrease the subjectivity of this evaluation, we employed cross-check analysis (scores given by one author were checked independently by the other author and conversely). Discrepancies among the members of the research team were discussed and reconciled. This approach allowed us to evaluate the selected quality principles for each company. An NFD reliability index (RI) was computed according to the following formula:

$$\text{NFD reliability index} = \frac{\text{R11} + \text{R12} + \text{R13} + \text{R14} + \text{R15}}{\text{5 (total number of reliability items)}}$$

Table 10.1. NFD reliability index and its components

Reliability items:		Measurement approach
RI1	Visual tools	1 = use of visual presentation in NFD, e.g. graphs, diagrams, charts, etc.; 0 = otherwise
RI2	Readability	1 = evidence that information uses plain language and consistent terminology, avoiding boilerplate, and, where necessary, providing definitions for technical terms of definitions of technical terms; 0 = otherwise
RI3	Quality of data	1 = existence of at least one item: description of measurement methods or underlying assumptions or sources; 0 = otherwise
RI4	Consistent over time	1 = existence of comparable non-financial information; 0 = otherwise
RI5	Assurance	1 = evidence that non-financial information is externally assured; 0 = otherwise

Source: Own elaboration.

10.3.3. Method of analysis

In this research, the significance of the differences between years and/or groups was tested using the Wilcoxon signed-rank test, which is a non-parametric test that can be used in situations in which there are two sets of scores to compare, but these scores come from the same participants.

10.4. Empirical results and discussion

Descriptive statistics are presented in Table 10.2. Among Polish sample companies, the level of RI varies from the minimum level of 0 to the maximum level of 1. The average RI is 0.32, indicating a low level of reliability of non-financial information. This suggests that there is still room for improvement in terms of the reliability of non-financial information. Standard deviation of RI is 0.30, suggesting that there is high variability among Polish companies in terms of reliability of NFD. In terms of the reliability items, the highest mean RI4 (mean = 0.52) indicates that, on average, 52% of companies disclose comparable information in their non-financial statements.

Table 10.2. Descriptive statistics

Variable	*n*	Minimum	Maximum	Mean	Median	Standard deviation
RI	426	0.00	1.00	0.32	0.20	0.30
RI1	426	0.00	1.00	0.48	0.00	0.50
RI2	426	0.00	1.00	0.36	0.00	0.48
RI3	426	0.00	1.00	0.15	0.00	0.36
RI4	426	0.00	1.00	0.52	1.00	0.50
RI5	426	0.00	1.00	0.11	0.00	0.31

Source: Own elaboration.

According to Figure 10.1, the mean RI level as well as almost all its components (except for RI5) have increased over the years under analysis, which is a positive trend. Moreover, the increase within the period before the implementation of the Directive is visibly lower, compared with the increase after the implementation. This suggests that the implementation of the Directive could have a positive impact on the reliability of NFD. Surprisingly, the RI5 level decreased over the years under analysis. In 2014, approximately 20% of the sample companies had their non-financial statements verified by external auditors. In the period between 2015 and 2017, the share of such companies decreased to around 10%, and in 2019 non-financial statements were not assured. This indicates that after the Directive implementation, sample companies refrained from having their NFD verified by external auditors.

Figure 10.2 and Table 10.3 present a comparison of the mean RI across the years under analysis. The results shown on the graph indicate that there is a significant difference between the mean RI in the years before and after the implementation of the Directive (Figure 10.2). Moreover, in order to assess the changes between the years, the Wilcoxon singed-rank test was utilized. The test

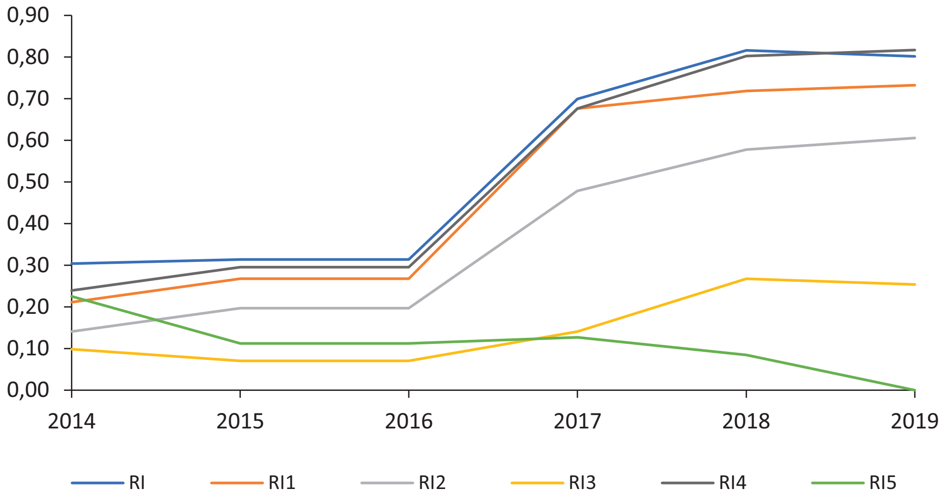

Figure 10.1. Development of the mean RI and its components

Source: Own elaboration.

confirms that the mean RI between the years before and after the implementation of the Directive differs significantly (p-value < 0.001) (Table 10.3: three stars). This difference cannot be observed within the years before and after the implementation of the Directive.

Table 10.3. Comparison of mean RI across the years under analysis

Years	RI_2014	RI_2015	RI_2016	RI_2017	RI_2018
	Z	Z	Z	Z	Z
RI_2015	0.2				
RI_2016	0.4	0.3			
RI_2017	4.8***	5.1***	5.1***		
RI_2018	5.8***	5.8***	5.9***	2.6**	
RI_2019	5.7***	5.7***	5.9***	2.2**	1.2

** $p < 0.05$, *** $p < 0.001$.

Source: Own elaboration.

In order to assess the statistical significance of the changes between the clustered years before and after the implementation of the Directive for RI and all the reliability items, the Wilcoxon signed-rank test was utilized. As presented in Table 10.4, statistically significant differences can be observed between the RI before and after the implementation of the Directive ($Z = 6.30$, p-value < 0.001). The RI increased by 147% between the clustered years, having

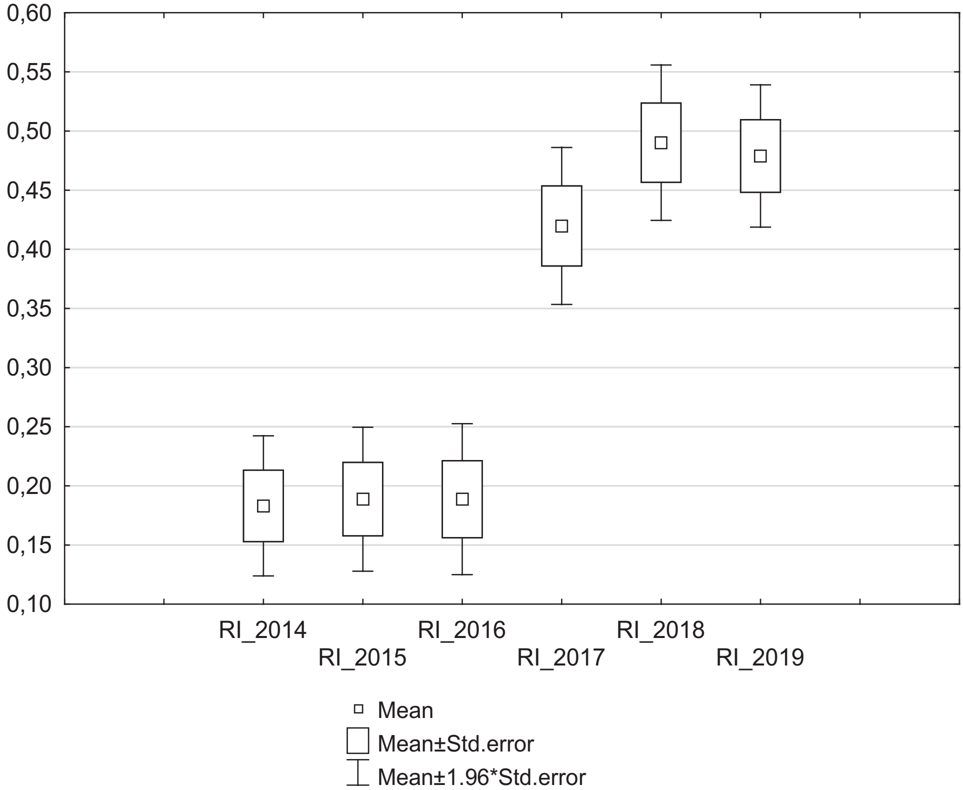

Figure 10.2. Comparison of mean RI across the years under analysis

Source: Own elaboration.

Table 10.4. Comparison of mean RI and its components before and after Directive implementation (2014–2016 versus 2017–2019)

Period	*n*	RI		RI1		RI2		RI3		RI4		RI5	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Before implementation (2014–2016)	71	0.19	0.25	0.25	0.41	0.18	0.36	0.08	0.26	0.28	0.41	0.15	0.22
After implementation (2017–2019)	71	0.46	0.26	0.71	0.44	0.55	0.47	0.22	0.37	0.77	0.36	0.07	0.14
Change (%)		147	5	185	8	208	30	177	43	176	–12	–53	–37
Z		6.30		5.42		4.98		2.96		5.87		2.26	
p		<0.001		<0.001		<0.001		<0.001		<0.001		<0.001	

SD – standard deviation; *Z* – Wilcoxon signed-rank test statistics; *p* – *p*-value.

Source: Own elaboration.

standard deviation at almost the same level. This indicates that relative variability has decreased, which is a positive trend. In terms of the reliability items, the Wilcoxon signed-rank test confirmed the statistical significance of the differences between the clustered years for each RI component. The highest increase is observed around RI2 (208%), and the lowest one around RI4 (176%). In general, it can be noted that the implementation of the Directive has positively influenced the reliability of non-financial information. The improvement in the reliability of non-financial reporting is in line with Hąbek and Wolniak's (2016) as well as Mion and Loza Adaui's (2019) findings.

10.5. Conclusions, limitations and future research agenda

In this analysis, we have examined whether the reliability of NFD provided by Polish listed companies has changed over the period surrounding the implementation of the Directive. The undertaken analysis allowed us to confirm the statistically significant change in the reliability of NFD between the analysed periods. In general, the implementation of the Directive has increased the level of reliability of NFD, but there is still room for significant improvement, in particular in terms of the comparisons in time and between entities as well as the external assurance of NFD.

We assume that our study contributes to the understanding of the potential impact of the Directive on the reliability of the NFD practices by EU companies. Our research has important implications for policy makers since it reveals that mandatory regulations are a crucial instrument in improving harmonisation of the legislation of NFD. Our research suggests that, as a result of implementing the Directive, stakeholders should be provided with more comparable and externally assured information. This could encourage them to use NFD in their decision-making processes to a greater extent.

Our research has several limitations that should be noted. In terms of the measurement instrument developed for this study, we have used a binary codding scheme instead of a rating scale. We have focused only on the Polish setting. The impact of the Directive on the non-financial reporting of companies from other EU countries may be potentially different. Thus, future research should consider extending our research along each of the above-mentioned limitations.

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The material is highly topical, well-motivated both academically and professionally. It contributes both to the international literature on the operationalization of the NFRD, and with Polish data, thus, contributing research from the underrepresented geographical area of Central and Eastern Europe. I also commend the authors for designing original research instruments (disclosure indexes) that could be further used to compare and contrast longitudinally and cross sectionally within Poland and the entire European region that is subjected to this very new piece of legislation. (...) Arguments are clear, hypotheses are clearly anchored in prior literature and (...) results are very well substantiated using correct and adequate research methods. Results are important in that they demonstrate both the outcome of the NFRD, and they fill gaps in our understanding of how nonfinancial reporting works and its effects. (...) Future research may definitely build on these results, to increase our understanding of how the non-financial directive impacts businesses, academia and practitioners. (...) Practitioners should be able to implement better the requirements of the NFRD, or to better understand the consequences of such requirements, and how their companies can benefit from them. Students should be able to use the results in their dissertations and better understand the reporting needs of their future employers. As such, they can be better prepared to access the work force, while at the same time understand the evolutions of their profession. Decision-makers should be more aware of the resources that are needed for their bodies and organizations to respond to the requirements of the NFRD, thus making better decisions for their organizations.

Prof. Catalin Albu
Bucharest Academy of Economic Studies, Bucharest, Romania

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