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The Value Creation Model in Integrated Reporting: Evidence from Poland

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Abstract:

Purpose: *The purpose of the paper is to identify and evaluate the approach and the quality of disclosures on value creation in integrated reports published by Polish companies. The article attempts to determine how practitioners understand and explain the concept of value creation. The study examines the integrated reporting practice of Polish companies to provide insight into the current status of value creation disclosures.*

Design/methodology/approach: *The quantitative and qualitative content analysis of value creation model disclosures in integrated reporting was performed. The quality of disclosures was assessed based on reports published by 31 capital groups between 2013-2021. A case study analysis of value creation disclosures was conducted based on the reports published for the year 2021, by 24 capital groups. The content analysis of integrated reports was conducted according to the following areas: background (motivations, objectives, beneficiaries, responsible persons, CEO's commitment, reporting standards), assurance and reliability (audit, verification, acknowledgments and awards), form of publishing, and content elements (distinguishing organizational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, capitals, KPIs, value-creation process). The article uses the results of literature studies on the subject, the results of previous research, and observations of business practice in the area of integrated reporting.*

Findings: *The findings reveal a definitely diverse approach of companies to disclosures in the field of value creation. In most cases, the value creation model is treated as a business model, however, some companies present these two categories separately, devoting separate chapters to both issues in integrated reports. Companies using the capital approach briefly present individual capitals with a classic division into manufactured, social, natural, intellectual, financial and human capital. The analysis also revealed a large variation in the reporting of indicators describing the effectiveness of individual capitals. It can be observed a subjective treatment of indicators and their incomplete reporting, as well as references to GRI indicators. Hence, the quality of the information presented on value creation varies.*

Practical Implications: *The results of the study complement the research gap of current literature on value creation by presenting the practice of integrated reporting in Polish companies.*

Originality/Value: *The research presented in the article contributes to the current literature on integrated reporting by using the novel dataset, identifying the level of value creation*

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disclosures in the examined integrated reports, and is aimed at presenting a critical interpretative perspective.
Keywords: *Value creation, business model, integrated reporting, capitals, non-financial reporting, disclosure quality.*

JEL classification: *M40.*

Paper type: *A research study.*

1. Introduction

1.1 Value Creation in an Integrated Report According to the IR Framework

Integrated reporting is the latest approach to corporate reporting and is still a subject of debate in the literature and business practice[3]. Integrated reporting emerged as a new reporting practice in 2013, and its main objective was to increase the efficiency of transferring information on value creation by the organization to external stakeholders. Integrated reporting is a response to modern market conditions, which result in new challenges for organizations, among others the stakeholders' expectation of greater transparency of reports prepared by business units.

This is closely related to the evolution of the approach to creation the organization's value. It should also be emphasized that integrated reporting appeared firstly in economic practice. It can therefore be said that integrated reporting is a corporate practice that has evolved over time and has been shaped by market forces, not regulations (Eccles and Serafeim 2014; 17; Liapis and Thalassinos, 2013; Trigkas *et al.*, 2019).

IIRC (International Integrated Reporting Council) defined integrated reporting as "concise communication about how an organization's strategy, governance, performance and prospects, in the context of its external environment, lead to the creation of value over the short, medium and long term (IIRC, 2013c; 7)". It can therefore be concluded that integrated reporting is intended to tell a story about how

[3]See Adams and Simnett, 2011; Eccles and Krzus, 2010a; Eccles and Krzus, 2010b; Eccleset al.2010; Eccles and Saltzman, 2011; Eccles et al., 2011; Berg and Jensen, 2012; Maroun and Solomon, 2012; Radley Yeldar, 2012; Dragu and Tudor-Tiron, 2013; Frías-Aceituno et al., 2013, b; García-Sánchez et al., 2013; Sierra-Garcia et al., 2013; Bilolo et al., 2014; Eccles et al., 2014; Eccles and Krzus, 2014; Eccles and Serafeim, 2014; Haller and van Staden, 2014; Rensburg and Botha, 2014; Stubbs and Higgins, 2014; van Bommel, 2014; Eccles et al., 2015; Bek-Gaik and Rymkiewicz, 2015; Chersan, 2015; Jinga and Dumitru, 2015a; Veltri and Silvestri, 2015; Velte and Stawinoga, 2016; de Villiers and Maroun, 2017; de Villiers et al., 2017; Dumay et al., 2017; Feng et al., 2017; McNally et al. 2017; Wen et al., 2017; Maroun, 2017; McNally and Maroun, 2018; Albertini, 2019; Eccles and Klimenko, 2019; Malola and Maroun, 2019; Bek-Gaik and Surowiec, 2020; Yousef, 2020.

an organization creates value by using all its resources (capital) on which, as suggested by the IIRC, its activities in the short, medium and long term depend.

Undoubtedly, integrated reporting has become a powerful means of meeting the growing demand for information on the value creation process from the perspective of various capital providers in order to reduce information asymmetry (Adams, 2015; IIRC, 2021). Walińska *et al.* (2016) also emphasized that the purely financial dimension of the company's value became too narrow and there was a need for a more holistic view of the organization's activities and the development of a report on the value creation process.

Integrated reporting was intended to combine in one report financial and non-financial disclosures regarding the activities and performance of the organization. The ultimate goal of integrated reporting is to present the dynamics of value creation by organizations. This is emphasized by the IR Framework, where we read that the integrated report is to be the result of integrated thinking defined as "active consideration by an organization of the relationships between its various operating and functional units and the capitals that the organization uses or affects" (IR, IFRS Foundation, 2021; 3).

The integrated report should present how the organization uses its broadly understood capital (financial, manufactured, intellectual, social and relational, human and natural) in order to create value. Therefore, it is important to measure and describe all capitals used by the company and to explain the links between them (IR, The International Framework, 2021).

All listed capitals are referred to as a "stocks of value" that the organization can use, and disclosures about them show the key resources through which the organization creates value.

In the literature on the subject, it is primarily emphasized that integrated reporting is holistic information about the entity that enables the assessment of its performance in the financial, social and economic areas. Integrated reporting is oriented towards different stakeholder groups. It presents financial and non-financial indicators, focusing on value creation. The IR Framework indicates the basic areas of integrated reporting: various resources that an organization uses in its operations, business model implemented by an organization[4], creating value over time (IR, IFRS Foundation, 2021).

The concept of capitals is one of the most distinguishing features of integrated reporting. In the IR Framework, the term capital refers to any resource an

[4]*The business model in integrated reporting is widely discussed in the literature, cf. Beattie and Smith, (2013); Bek-Gaik and Surowiec (2022). Lai et al. (2013); IIRC (2013a); Bini et al. (2018); Bini et al. (2021), Ostervalder et al. (2010).*

organization may use to conduct its business. It distinguishes six capitals: financial, manufactured, intellectual, social and relational, human and natural, which are defined as "stocks of value" through which an organization creates value.

These capitals are of fundamental importance for the organization's operations, as they are input elements of the organization's business model (IIRC, 2013c). Through the actions taken, the organization increases, decreases or transforms these capitals into outputs and results. It is argued that integrated reporting enables an organization to convey a clear and understandable message about how the organization uses these different forms of capital to create and preserve value over different time horizons.

The definition of the business model is also central to the IR Framework. It is expected that the integrated report should clearly describe the organization's business model, defined as "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" (IR, IFRS Foundation, 2021; 41). The business model was indicated as a very important element in assessing the organization's ability to create and preserve value over time. It should be emphasized that the business model is the foundation and a key element of the content of the integrated report.

The presentation of information on the business model in integrated reporting seems to be justified due to the fact that there is a widespread belief that one of the key starting points for the analysis of value creation by a potential investor should be the organization's business model. It should be noted that in economic practice, business model reporting is currently inconsistent, both in terms of its description and structure, as well as scope.

The IIRC's integrated report framework contains seven content elements: organizational overview and external environment; governance; risks and opportunities; strategy and resource allocation; business model; performance; outlook, and basis of preparation and presentation (IR, IFRS Foundation, 2021; 38-48).

All the content elements help to understand the logic of running an organization's business and show the value creation process. It seems that the proposed seven content elements of the integrated report provide full and complete information about the organization's activities. The integration of all these aspects should lead to a broader understanding of the organization's economic activities and their effects, which will enable stakeholders to assess the organization's business model and strategy in the past, present and future.

It should be noted, however, that the IR Framework is very general, it does not contain any proposals of the reporting tools, instruments or specific data that should be disclosed in an integrated report. The information base for integrated reporting is also not mentioned. The IR Framework does not precisely define both the format of the integrated report and the components of its content. For example, it does not list performance measures that should be presented in the report (Key Performance Indicators – KPI).

It can be said that it leaves room for multiple ways of understanding the scope and content of an integrated report, thus leading to the development of individual integrated reporting practices, which will require improving in the future, mainly to ensure comparability of integrated reports.

In particular, the ambiguity relates to the value creation process. It should be noted that, according to the assumptions of the IR Framework, the value created by an entity over time "manifests itself in increases, decreases or transformations of the capitals caused by the organization's business activities and outputs (IR, IFRS Foundation, 2021; 16).

The supplementary document broadens this perspective, indicating that "value is created through an organization's business model, which takes inputs from the capitals and transforms them through business activities and interactions to produce outputs and outcomes that, over the short, medium and long term, create or destroy value for the organization, its stakeholders, society and the environment" (IIRC, EY, 2013; 9)[5].

As Kobiela-Pionier states, in both publications we are dealing with an implicit definition, a default concept of value creation, which in the case of each individual report will somehow emerge from the entire process presented by the reporting person (Kobiela-Pionnier, 2019).

It can be said that the IR Framework states that there are two interrelated levels of value: the value created for the organization itself and for other parties: stakeholders and the wider society (IR, IFRS Foundation, 2021; 16). The effect of the first level of value creation is generating return for capital donors, and the next one is the value created for other stakeholders (Kobiela-Pionnier, 2018).

Both levels of value creation are closely related, which results from a wide range of activities of the company, its interactions and relations with the closer and further environment. The concept statements of IR also do not mention the methods of measuring value, which undoubtedly constitutes a significant problem. It should also be mentioned that value creation is confused with the value creation process, and the

[5]*In order to see the process of presenting value creation in an integrated report, entities should analyze subsequent IIRC publications, including creating value studies, cf. IIRC (2013b), IIRC (2014); IIRC (2015); IIRC (2016); IIRC (2017a), IIRC (2017b); IIRC, IFAC (2017).*

value creation process with the business model, which is also confirmed by research into the reporting practice.

To sum up, the integrated report combines financial and non-financial aspects in one document, creating holistic information about the company and enabling the assessment of its performance in various areas of activity. In addition, it also shows the links between financial and non-financial measures of performance. It presents financial and non-financial indicators, focusing on value creation. Integrated reporting is oriented towards different stakeholder groups. Compared to current reporting practices, it focuses not only on the past but also on the future, shows strategic connections, is more transparent and shows all value drivers (Berndt *et al.*, 2014, p. 196).

Therefore, IR should provide concise information about value creation in the organization, which allows its users to see the in-depth links between the key resources and performance of the organization and provides a clear picture of the organization's strategy and processes in order to enable a reliable and credible assessment of its activities. However, the lack of precise guidelines in some areas hinders the process of preparing reports, as well as their interpretation.

Hence, the authors attempted to assess the quality of disclosures on value creation and present practical solutions used in Polish companies. The purpose of the paper is to identify and evaluate the approach and the quality of disclosures on value creation in integrated reports published by Polish companies. The article attempts to determine how practitioners understand and explain the concept of value creation. The article uses the results of literature studies on the subject, the results of previous research, and observations of business practice in the area of integrated reporting.

1.2 Business Model and Value Creation

An integrated report explains how an organization creates, preserves or erodes value over time. When describing the value creation, the influence of the external environment, relations with stakeholders and dependence on various resources should also be taken into account.

The integrated report is therefore intended to provide insight into:

- the external environment that affects the organization,
- resources and relationships used by the organization, capitals: financial, manufactured, intellectual, human, social and relational, and natural,
- and how the organization interacts with the external environment and uses capitals to create, maintain or destroy value in the short, medium and long term.

The key element of IR explaining the value creation is the business model. The business model is a key element of the organization's strategy and is the basis for decisions, plans and actions taken to create value in the short, medium and long term. Moreover, the business model is not only the starting point for any investor analysis, but it should also be considered as a key link between the strategy, management and performance of the organization[6].

The business model, defined in IR Framework[7], is perceived as a very important element of information for investors, used to assess the company's ability to create and maintain value over time. The organization's business model was identified as one of the key disclosures in integrated reporting.

The business model is a fundamental concept for understanding how organizations operate and how it create value. It was also found that investors promote the position that high-quality reporting describing an organization's business model is essential in better understanding organization's performance, the impact of the external environment on the organization and how organization create and preserve value over a longer term.

The definition of the business model presented in the IR Framework presents four key elements of the business model, i.e. inputs, business activities, outputs and outcomes. They are closely related because at the beginning an organization acquires its capital or inputs and then converts them into outputs through business activities.

The last phase of the process, closely related to the market, determines the outcomes that affect the economic and financial condition of the organization, causing regular reviews of the entire model. The system is then dynamic and inevitably connects with other aspects of the organization, such as governance, opportunities and threats, external environment, etc. Each key element of the business model requires a specific disclosure that describes its characteristics, relationships and changes over time.

According to the IR Framework, the first component of the business model coincides with the inputs, i.e., the organization's capital, which are value drivers and, accordingly, support or enable the achievement of organization's goals. Each capital can contribute to the creation of a different value through activities carried out by the organization. According to the IR Framework, an organization has six categories of capital the capitals comprising: financial, manufactured, intellectual, human, social

[6]*In harmonizing corporate disclosure, the IIRC has made a significant contribution to business model reporting. In fact, the IR Framework proposed by the IIRC (2021) contained a clear definition of the business model and its key elements.*

[7]*The term "business model" was extensively discussed in the September 2011 IIRC Discussion Paper: Towards Integrated Reporting – Communicating Value in the 21st Century (IIRC 2011), where it was presented as one of the two main themes relating to the future direction of organizational reporting.*

and relationship, and natural, although as discussed in paragraphs 2.17-2.19 (IR, IFRS Fundation, 2021), organizations preparing an integrated report are not required to adopt this categorization[8].

In particular, financial capital and manufactured capital are the foundations of the activities of any organization (Busco et al. 2013). The first category includes all funds available to the organization. Financial capital has been defined as a set of funds that is available to an organization for use in manufacturing products or providing services, obtained through financing such as debt or equity, or generated as a result of business operations or investments.

The second category represents the so-called set of equipment and tools used in the production process. In general, manufactured capital[9] is production resources, physical facilities that are available to an organization for use in the production of goods or services, including buildings, equipment, infrastructure (such as roads, ports, bridges, and water and wastewater treatment plants) (IR, IFRS Fundation, 2021).

Other capitals are related to the organization's intangible assets and are closely related to the two previous ones. We can divide them into three categories: human capital, intellectual capital and social and relational (Busco *et al.*, 2013) capital. The first category includes the stock of knowledge, skills and human resources of the organization, including both employees and managers (Coff, 2002).

Human capital refers to both explicit and implicit competences acquired through formal education and training in the workplace. Human capital certainly plays an important role in any organization with potentially important productivity implications (Crook *et al.*, 2011). The IR framework describes human capital as people's competencies, abilities, skills and experience, as well as their motivations for innovation, including aligning and supporting the organization's corporate

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[8]*Organizations may categorize the capitals differently. For example, relationships with external stakeholders and the intangibles associated with brand and reputation (both identified as part of social and relationship capital in paragraph 2.15), might be considered by some organizations to be separate capitals, part of other capitals or cutting across a number of individual capitals. Similarly, some organizations define intellectual capital as comprising what they identify as human, "structural" and "relational" capitals. Financial capital – The pool of funds that is: – Available to an organization for use in the production of goods or the provision of services – Obtained through financing, such as debt, equity or grants, or generated through operations or investments (IR, IFRS Fundation, 2021).*

[9]*Manufactured capital – physical objects (as distinct from natural physical objects) that are available to an organization for use in the production of goods or the provision of services, including: – Buildings – Equipment – Infrastructure (such as roads, ports, bridges, and waste and water treatment plants). Manufactured capital is often created by other organizations, but includes assets manufactured by the reporting organization for sale or when they are retained for its own use (IR, IFRS Fundation, 2021).*

governance, its approach to risk management and ethical values, ability to understand and implement the organization's strategy, loyalty, motivation to improve processes and improve goods and services[10].

Intellectual capital[11], on the other hand, includes other types of intangible assets that contribute to organization competitive advantage. In particular, this capital usually refers to the brand value and reputation developed by the organization on the one hand, and its intellectual property, such as licenses, patents, copyrights, and organizational systems or procedures, on the other hand, but this definition is not shared among scientists (Petty and Guthrie, 2000).

The third category of intangible capital refers to the organization's ability to establish effective relationships with other economic entities in order to mediate economic transactions, improving individual and collective welfare (Busco et al. 2013). Social and relational capital[12] includes relationships within and between communities and between stakeholder groups and other networks, as well as the ability to share information to improve individual and collective performance. Social and relational capital includes:

- shared norms, shared values and behaviors,
- key stakeholder relationships and the trust and commitment that the organization has developed and seeks to build and protect with external stakeholders,
- intangible assets related to the brand and reputation that the organization has developed,
- license of the organization to operate.

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[10]*Human capital – People's competencies, capabilities and experience, and their motivations to innovate, including their: – Alignment with and support for an organization's governance framework, risk management approach, and ethical values – Ability to understand, develop and implement an organization's strategy – Loyalties and motivations for improving processes, goods and services, including their ability to lead, manage and collaborate (IR, IFRS Fundation, 2021).*

[11]*Intellectual capital – Organizational, knowledge-based intangibles, including: – Intellectual property, such as patents, copyrights, software, rights and licences – "Organizational capital" such as tacit knowledge, systems, procedures and protocols (IR, IFRS Fundation, 2021).*

[12]*Social and relationship capital – The institutions and the relationships within and between communities, groups of stakeholders and other networks, and the ability to share information to enhance individual and collective well-being. Social and relationship capital includes: – Shared norms, and common values and behaviors – Key stakeholder relationships, and the trust and willingness to engage that an organization has developed and strives to build and protect with external stakeholders – Intangibles associated with the brand and reputation that an organization has developed – An organization's social licence to operate (IR, IFRS Fundation, 2021).*

Intellectual, social and relational capital can be shaped in different ways and includes values shared with the community and loyalty and trust built with different categories of stakeholders.

The last input of the business model is natural capital, i.e. natural resources or environmental assets (such as air, land, water, etc.), which contribute to the development of the organization's activities, but certain risks arise in connection with their use, and organizations should aim to prevent them. The IR Framework describes natural capital as all renewable and non-renewable environmental resources and processes that provide goods or services that support the past, current or future prosperity of an organization. It includes: air, water, land, minerals and forests; biodiversity and eco-system health (IR, IFRS Fundation, 2021; 19).

Not all of the capitals are owned by the organization, but each capital is considered an input in the business model (value creation model) because it contributes to or influences the business process. It should be noted that there is a continuous flow of capital between the external environment and the organization, where these capitals are modified (i.e., reduced or transformed) in connection with the conducted business activity (e.g., manufacturing of products). In this way, the value of each capital is either directly accumulated (e.g., labor and raw materials) or indirectly (e.g., for infrastructure or legislation) to create new value for all parties involved.

As a result of business activities, capitals are transformed into the outputs. Business activities include basic activities, i.e. research and development, planning, design, production/conversion, product differentiation, market segmentation, distribution, service provision, quality control, operational improvement, relationship management, after-sales service. The fundamental concepts of integrated reporting indicate that “at the core of the business model are activities that, through the consumption and/or transformation of inputs into outputs, aim to generate valuable outcomes” (IIRC, 2013a, p. 8).

The description of key business activities can include explanation: how the organization differentiates itself in the marketplace (e.g., through product differentiation, market segmentation, delivery channels and marketing); the extent to which the business model relies on revenue generation after the initial point of sale (e.g. extended warranty arrangements or network usage charges); how the organization approaches the need to innovate; how the business model has been designed to adapt to change.

The concept of IR also pays attention to the description of the contribution made to the organization’s long-term success by initiatives such as process improvement, employee training and relationships management.

Organization’s key products and services are outputs, that include also by-products and waste (including emissions), depending on their materiality for the organization.

However, products do not represent the final goal of the business activities, aimed at generating valuable outcomes, i.e. internal or external effects on the organization's capitals. In general, the outcomes can be divided into two categories, i.e., techno-economic outcomes, such as product and process, and innovation and profitability of customer relations, and psychosocial effects, such as a sense of success and trust.

Outcomes are the internal and external consequences for the capitals as a result of an organization's business activities and outputs. The outcomes can be divided into internal outcomes (e.g., employee morale, organizational reputation, revenue and cash flows) and external outcomes (e.g., customer satisfaction, tax payments, brand loyalty, and social and environmental effects). The IR Framework also indicates both positive outcomes (i.e. those that result in a net increase in the capitals and thereby create value) and negative outcomes (i.e., those that result in a net decrease in the capitals and thereby erode value).

Describing individual capitals, their effectiveness should be presented. Unfortunately, the framework does not define the effectiveness nor propose any indicators. However, the performance indicators are crucial to understand what is the outcome of individual capitals.

The measurement of capital effectiveness should answer the question "to what extent the organization has achieved its strategic goals and how individual capitals contributed to it". For this purpose, it is worth using the key performance indicators (KPI)[13], which can be divided into financial and non-financial. Financial KPIs are primarily indicators used in financial analysis and other data from financial statements. The role that KPIs can potentially play in integrated reporting, i.e. measuring a company's ability to create value by increasing or transforming its tangible and intangible capital (Busco *et al.*, 2013).

In conclusion, the value creation disclosures are a valuable source of knowledge showing the links between financial and non-financial data, what makes reporting more understandable and transparent for stakeholders; presenting the risks and opportunities as well as the challenges of business in both quantitative and narrative form. The key performance indicators should provide all relevant information on: sustainable development, corporate governance, ecology, social and financial matters.

[13]The key performance indicators (KPI) is a set of indicators focusing on those aspects of the company's operations that are most important for its success now and in the future (Parmenter, 2010; 4). Non-financial KPIs are often used to quantify outcomes that are difficult to measure and should be treated more as 'indicators' than as concrete measures, cf.: Kaplan and Norton (1998); Ngwakwe (2008); Bartolini et al. (2013); Bini et al. (2019.

2. Analysis of the Quality of Integrated Reports and their Compliance with the (IR) Framework

This study examines the integrated reporting practice of Polish companies in the 2013-2021 period to provide insight into the current state. It presents the results of quantitative and qualitative assessments of integrated reporting. It employs content analysis using a weighted disclosure index (Likert scale) to examine the quality of disclosure in integrated reports. The quality of disclosures was assessed based on reports published by 31 capital groups during the period under consideration. A case study analysis was conducted based on the reports published for the year 2021.

The study aimed to assess compliance with the formal requirements of integrated reporting, forms of non-financial information presentation, quality of disclosures, and use of capital approach for preparing reports. Only some companies in Poland have published integrated reports. A total of 147 reports were published during the examined period (Table 1). Relative to 2013, the number of companies publishing integrated reports has gradually increased, stabilizing at around 20 since 2018. Table 1 presents the number of reports for each year.

***Table 1**. Number of integrated reports included in the study*

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Number of reports	6	8	11	17	18	21	20	22	24	147

***Source:** Own elaboration*.

The research process included the identification of companies that prepare integrated reports and the quantitative and qualitative assessment of disclosures. The test performed by Pistoni *et al.* (2018), modified for the purposes of this study, was used as a model.

The study analyzed the form of integrated reports and changes in the content and quality of individual disclosures in integrated reports. For the purpose of this study, a list of assessed elements was defined. The quantitative analysis involved three areas: background (motivations, objectives, beneficiaries, responsible persons, CEO's commitment, reporting standards), assurance and reliability (audit, verification, acknowledgments and awards), and form of publishing. The presence or absence of each proposed variable was assessed. A score of 0 meant no disclosure of the item, and a score of 1 was assigned if the item was included in the report.

The quality assessment of integrated reports was based on content analysis, distinguishing such variables as: organizational overview and external environment, governance, business model, risks and opportunities, strategy and resource allocation, performance, outlook, capitals, value-creation process. To assess the quality of future disclosures, a six-point Likert scale was adopted, where 5 is the highest rating and 0 means the element is absent in the content of the report.

Table 2 presents the level of variables characterizing the examined integrated reports in the overall sample (31 firms, 147 firm-year observations).

Table 2. *Presence of variables of the background, assurance and reliability, and form areas in the overall sample*

	Yes	%	Total
Variables			
Background			
Motivations underlying the choice of adopting IR	117	80%	147
Objectives pursued by the IR	132	90%	147
Beneficiaries of the document	147	100%	147
Manager in charge of IR process	98	67%	147
CEO's commitment	145	99%	147
Title of the report	144	98%	147
Consistency of IR with IIRC standard	106	72%	147
Consistency of IR with GRI Guidelines	140	95%	147
Assurance and reliability			
Internal audit	125	85%	147
Third-party verification	53	36%	147
Acknowledgements and awards for IR	18	12%	147
Form			
Financial report included	96	65%	147
Traditional publishing (paper, digital)	101	69%	147
Interactive online publishing	114	78%	147

Source: *Own elaboration.*

Based on the results obtained, it can be concluded that all surveyed companies indicate the recipients of the report, the involvement of top management indicates 99% of the surveyed entities, almost the same part of the reports (98%) has an "integrated report" in the title. Most reports (95%) were prepared based on GRI guidelines, the IIRC standard as the basis for preparing reports is indicated by 72% companies. The results in the area of background indicate that the reporting entities do not pay much attention to disclosure regarding the persons responsible for preparing the report (only 67%) and the reasons for publishing the report (80%).

However, more reports include information on the purposes of publishing the report (90%). In the area of credibility and reliability, it can be observed that most of the reports were the subject of an internal audit (85%), and much less (36%) of external audit. A small number of reports (12%) achieved awards or accolades for quality. In the area of form, the interactive online version of reports prevails (78%), slightly less (69%) are reports available in the traditional version (in the form of a PDF document), while about 65% of reports contain a full financial statement.

In the next section of the study, the content elements of the integrated report occurring in the analyzed reports were assessed (Table 3) in terms of quality in accordance with the proposed scoring system. The results of qualitative analysis of the assessed variables may be more subjective than in the quantitative assessment due to the wider scale of scoring. Average assessment of disclosures in the content area (Table 3) indicate that the scores for most items are higher in 2021 than in 2013.

The dynamics of changes in the quality of disclosures of the content elements in integrated reports was assessed in relation to 2016 due to the fact that in the three previous years (2013-2015) the number of reports was significantly different from the number of reports in 2021.

The analysis showed that the quality of information on the business model (increase in average scores by 18%) and capitals (increase by 19%) has improved in analyzed period. A significant growth can be observed especially in case of disclosure on business model inputs, such as environmental capital (38%), financial capital (28%) and human capital (23%), as well as in case of some elements of organizational overview, such as: management board (33), board of directors (31), and group structure disclosure (28).

The significant increase of disclosure quality can also be observed in case of strategy elements disclosure, such as: financial strategic goals (increase by 28%), and capital expenditure (increase by 24%), and also in case of disclosure about outputs of business activities (25%).

However, stability is visible in some elements of organizational overview and external environment disclosures, like: core markets (increase by 24%), key quantitative information (increase by 24%), vision (increase by 24%), customers (increase by 24%), and competitors (decrease by 24%), which probably results from the fact that companies prepare such information also due to other formal requirements, e.g. for the purposes of preparing annual report or sustainability reports. It is also worth noting that in recent years the quality of separate forward-looking information has improved (although only in some reports). Information on the process of creating value is better in 2021 than in 2016 by 9%.

3. Disclosure of the Value Creation Process in Integrated Reports

In order to assess the current state of disclosures on value creation in integrated reporting in Polish companies, the content of integrated reports was analyzed according to the following areas:

- Disclosures about the value creation model
- Capital disclosures,
- Disclosures on the effectiveness of capital use.

All integrated reports published in 2021 were analyzed regarding the use of key performance indicators characterizing the value creation process (Table 4). The reports were analyzed in terms of the six capitals in presenting the value creation process. The types of key performance indicators used in presenting the value creation process in integrated reports is presented in Table 4.

The analysis reveals a definitely diverse approach of companies to disclosures in the field of value creation. In most cases, the value creation model is treated as a business model, however, some companies present these two categories separately, devoting separate chapters to both issues in integrated reports.

In general, disclosures on value creation refer to the presentation of the business model scheme in accordance with the Business Model Background Paper (IIRC, 2013a) and the characteristics of individual capitals on which the company's operations are based and refers to the IR Framework guidelines. The business model coincides with the value chain and presents assumptions ensuring effective implementation of the strategy, adopted mission and vision, the organizational structure of companies is also presented (e.g., JSW, PGNIG, mBank). When presenting the business model scheme, some companies use their own individual solutions. On the other hand, when describing the business model, the WSE Group presented the entire activity chain, from issuer services to post-trading services.

On the other hand, the core of the PZU Group's value creation model is business activity, the most important element of which is insurance. The offer is complemented by health, banking, investment and pension products. In turn, TAURON Group presents the business and operational model and value creation model. Some companies do not present the business model and the value creation model at all, and disclosures on these issues are included in various parts of the report (PEKAO, Totalizator Sportowy, Unibep).

Companies using the capital approach briefly present individual capitals with a classic division into manufactured, social, natural, intellectual, financial and human capital (e.g. TAURON, ORLEN, PGNiG, JSW, BUDIMEX, KGHM, LOTOS). Sometimes the concept of organizational and relational capital appears (Budimex), while some reports present intellectual and human capital together as one (e.g., Famur, Unibep, TIM).

When discussing particular types of capital, some companies present: management of a particular capital, risk related to capital, achieved outcomes and impact on other capitals (e.g. JSW, LOTOS, PGNiG, ORLEN). In addition, LOTOS Group in its integrated report presents changes in particular capital compared to the previous year. On the other hand, other companies present only input expenditures and achieved outcomes (e.g. Azoty). In addition to information on the capitals, in the case of several companies there is a clear reference to GRI indicators.

The analysis also revealed reports that do not use the capital approach to disclosing value creation (e.g. mBank, TIM, Azoty), and the elements creating value are described in different parts of the report, for example environmental elements related to natural capital or information related to human capital are presented in a separate chapters.

The analysis also revealed a large variation in the reporting of indicators describing the effectiveness of individual capitals (Table 4). One can observe a subjective treatment of indicators and their incomplete reporting, as well as references to GRI indicators. Hence, the quality of the information presented on value creation varies.

The most widely described is human and financial capital. Financial capital is presented through entire financial statements or their large fragments and ratios used for financial assessment. In the case of human capital, the most frequently disclosed information is: number of employees, number of new employees, share of women among employees, employees turnover, average hours of training per employee.

In addition, extensive descriptive information on human capital is presented, in particular, HR systems, work safety, incentive systems, training, educational and internship programs, scholarships, initiatives related to sharing professional experience and knowledge sharing are discussed.

Subsequently, natural (environmental) capital is widely discussed, often understood as natural resources that the company uses and has an impact on. The companies describe actions aimed at minimizing the negative impact on the environment, climate change, and reduction of air pollution. In addition, PGNiG Group and PGE Group describe activities aimed at increasing energy efficiency. In the environmental area, the sustainable development strategy is also described, as well as references to leading documents related to ecological initiatives and biodiversity.

Intellectual capital disclosures typically include unique technical solutions, innovations and research and development results. The disclosure on intellectual capital also include the knowledge and competences of employees. The following indicators are presented most often: number of development activities per employee, number of participants in the internship programs, number of patents, capital expenditures on research and development.

Disclosures on social capital are also differentiated. Most companies treat social capital as an ability to build relationships with their environment (suppliers, local communities), which they support through sponsorship, donations and other initiatives. Other companies disclose information on tax paid, support for Ukrainian workers and their families, support for local initiatives, amount paid in property tax.

Manufactured capital is generally understood as tangible fixed assets used by companies, the entire infrastructure related to the performance of operations, it also includes corporate governance and management systems functioning in individual companies.

The reports present both financial and non-financial KPIs. The most popular financial KPI assessing the effectiveness of the use of financial capital was net profit, sales revenue, EBIT and EBITDA, ROA, ROE, debt ratio. Other KPIs concerned selected items of the balance sheet, income statement, cash flow and selected capital market ratios: earnings per share, diluted earnings per share, and dividends. Non-financial KPIs varied by industry. For example, in the fuel and energy industry (e.g., LOTOS, PGNiG, ORLEN, PSE) the efficiency of manufactured capital was characterized by such indicators as Exploration and Production ratio, line length. In turn, banks disclose the number of branches, number of customers, the number of ATMs.

Similar efficiency ratios were presented by companies in the area of natural and environmental capital, e.g. carbon footprint, GHG emissions, sponsoring and support for charitable institutions, public benefit organizations, support for social organizations, number of volunteers.

The number of KPIs is very diverse, it would be worth identifying those that are crucial to enable greater comparability of results and the possibility of using them for decision-making. On the one hand, the standardization of the set of indicators will improve the comparability of information, but on the other hand it will limit the freedom of companies to present individual performance.

According to the authors, in order for the disclosure of specific KPIs to be effective, companies should limit their number to those that are really important from the point of view of achieving goals. The source of such key indicators could be the popular performance measurement system – the Balanced Scorecard.

The results presented in the study fill the research gap in the literature on non-financial reporting by presenting the practice of integrated reporting in Polish companies. The study indicates the need to organize disclosures related with reporting information on value creation in integrated reports. The research is not free from limitations, as it is based on data from one country and up to 24 companies that published integrated reports in Poland in 2021.

4. Conclusions

In summary, integrated reporting provides an effective and concise description of a company's ability to create sustainable value and combines information on management, strategy, risk, financial and non-financial performance. It also takes into account environmental, social and governance issues that are increasingly recognized as being responsible for bridging the gap between a company's book value and market value. It is widely recognized that the value creation by company depends on the ability to manage a diverse set of capitals (financial, manufactured, human, intellectual, natural, social).

Non-financial data disclosed in annual reports, however, is voluntary, and the basis is usually perceived as unreliable, incomparable, and therefore cannot influence investors' decisions. Due to the diversity of disclosures, a uniform set of KPIs used to present disclosures on value creation in non-financial reports should be developed.

The analysis conducted by the authors clearly indicated that companies show both value creation and business model - often in separate chapters of the report. Most companies use the concept of six capitals, but there are also reports where disclosures about capitals are scattered throughout the report, and information about value creation must be sought among many data. The descriptions of capitals in the reports contain various information – sometimes definitions of capital, ways of its management, risk related to a particular capital and efficiency ratios.

Some companies adopt their own individual solutions. This is probably due to the lack of uniform guidelines for disclosing the value creation model. However, it should be emphasized that value is created as a result of the combination of a wide set of factors and their interactions. Value creation also manifests itself in various business outcomes. These issues are often individual-specific, so unifying the set of solutions is controversial. However, the vague definition of the process of creating value and its measurement in IR Framework certainly make it difficult to prepare integrated reports and may suggest a marketing or manipulative approach.

Many companies claim that an integrated report is primarily a story about how value is created in an organization – not only for itself, but also for its environment: shareholders, economy and local communities, employees and business partners, science and the natural environment. It also presents key indicators valuable from the point of view of representatives of the capital market. Considering the above, it should be stated that the integrated report is a valuable and useful report for all stakeholders and due to its key purpose, it can be called a “value creation report”.

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Table 3. *Average scores of disclosures in the content area in individual years*

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2021/2016 %
Organizational overview and external environment	4,00	3,75	3,64	4,00	4,39	4,19	3,75	3,82	3,79	-5%
Key quantitative information	3,50	3,50	3,73	3,88	4,17	4,24	4,15	4,09	4,00	3%
Mission	3,33	3,63	3,27	3,41	3,56	3,62	3,45	3,50	3,63	6%
Vision	2,17	2,25	2,45	2,94	3,39	3,38	3,15	3,14	3,04	3%
Core markets	3,83	4,00	3,73	3,82	4,06	4,10	3,90	3,86	3,88	1%
Customers	3,33	3,38	3,09	3,47	3,89	3,71	3,55	3,50	3,58	3%
Competitors	3,00	2,75	2,82	3,00	3,44	3,33	3,05	2,91	2,88	-4%
Stakeholders	3,67	3,25	2,91	3,35	4,00	3,86	3,60	3,55	3,63	8%
Governance	3,50	3,25	3,27	3,06	3,56	3,67	3,55	3,55	3,58	17%
Group structure	3,67	3,50	3,18	3,12	3,61	3,86	3,80	3,82	4,00	28%
Management board	3,00	3,00	2,91	2,82	3,61	3,57	3,45	3,50	3,75	33%
Board of directors	3,17	2,75	2,64	2,65	3,28	3,43	3,40	3,45	3,46	31%
Corporate governance	3,33	3,63	3,09	3,35	3,61	3,71	3,60	3,77	3,96	18%
business model	2,50	2,25	2,55	3,00	3,28	3,24	3,45	3,45	3,54	18%
Capitals	2,17	1,63	2,64	3,06	3,56	3,67	3,50	3,55	3,63	19%
Financial capital	2,17	1,88	2,55	2,82	3,44	3,67	3,40	3,45	3,63	28%
Manufactured capital	3,00	2,13	2,64	2,94	3,39	3,62	3,30	3,36	3,50	19%
Human capital	2,67	2,00	2,64	2,94	3,44	3,62	3,35	3,41	3,63	23%
Intellectual capital	1,83	1,25	2,09	2,88	3,33	3,43	3,10	3,23	3,33	16%
Social capital	2,00	1,50	2,27	2,88	3,56	3,62	3,30	3,32	3,46	20%
Natural capital	1,83	1,25	2,09	2,59	3,28	3,38	3,35	3,50	3,58	38%
Business activities	3,17	3,50	3,45	3,76	3,89	4,05	3,70	3,68	3,71	-1%
Business activities	3,17	3,50	3,64	4,00	4,11	4,10	3,90	3,91	4,00	0%
Social responsibility activities	2,83	2,88	3,00	3,24	3,33	3,24	3,05	3,18	3,25	0%
Environmental activities	3,17	2,88	2,82	3,18	3,28	3,14	3,30	3,32	3,50	10%
Activities in favor of employees	3,00	3,00	3,09	3,18	3,44	3,52	3,40	3,36	3,46	9%
Outputs	3,50	3,63	3,36	3,88	4,00	3,95	3,95	3,86	3,83	-1%
Products/Services	2,50	2,88	2,91	3,06	2,89	3,14	3,95	3,86	3,83	25%
By-products	0,33	0,38	0,18	0,18	0,17	0,38	1,05	1,09	1,13	-
Outcomes	3,17	3,25	3,36	3,65	4,00	4,05	3,90	3,86	3,83	5%
Value creation process	3,00	2,63	2,64	3,35	3,78	3,71	3,70	3,64	3,67	9%
Risks and opportunities	3,00	3,38	3,64	3,53	3,89	3,76	3,55	3,55	3,63	3%
Risks map	2,50	2,63	3,09	3,41	3,67	3,86	3,75	3,73	3,88	14%

Strategy and resource allocation	3,00	3,38	3,64	3,82	4,39	4,10	3,85	3,82	3,88	1%
Short, medium, and long term strategic goals	3,00	3,38	3,45	3,47	3,94	3,90	3,60	3,68	3,75	8%
Strategy	2,83	3,00	3,09	3,47	3,72	3,90	3,80	3,77	3,79	9%
Financial strategic goals	1,67	1,75	2,18	2,53	2,72	2,95	2,90	3,00	3,25	28%
Capital expenditure	2,17	2,50	2,18	2,41	2,94	2,76	2,95	2,86	3,00	24%
Performance	3,83	4,38	4,09	4,18	4,39	4,24	4,15	4,14	4,08	-2%
Outlook	2,83	2,88	2,82	2,94	3,56	3,43	3,00	3,00	3,04	3%
Basis of presentation	3,67	3,75	3,45	3,53	4,11	4,14	3,95	3,95	3,96	12%

Source: *Own elaboration.*

Table 4*. The KPI's used to illustrate the value creation process in terms of capitals approach in integrated reports*

No.	Company	Financial	Manufactured	Human	Intellectual	Natural/Environmental	Social
1.	JSW	Balance sheet total Equity Non-current assets Current assets Return on assets Return on equity Revenue from sales Operating profit EBITDA EBITDA margin Net result Cash flows from operating activities	Mining facilities that extract hard coal Coking plants Mechanical coal processing facilities Production facility for composite solid fuels Number of concessions for mining of hard coal and methane as associated mining products Amount of coal produced Amount of coke produced Amount of ecological fuel VARMO produced Approx. number of active longwalls	People employed at JSW group Expenditures on occupational health and safety Percentage of managers hired from local community Number of accidents at the group People employed at jsw group Expenditures on occupational health and safety Percentage of managers hired from local community Number of accidents at the Group	Number of on-going R+D+I projects Number of new projects initiated Amount spent by JSW Group on the research and development area, Number of projects covered by Methodology for Program and Project Management Net book value of intangible assets Number of meetings of the Project Management Academy in Przemysł as part of a joint project by three mining companies (JSW, KGHM, PGG)	Expenditures on environmental protection Total water consumption Quantity of sewage Carbon footprint Expenditures on environmental protection Total water consumption Quantity of sewage Carbon footprint Amount of high-quality table salt produced Spending on investments in environmental protection Area of land subject to rehabilitation Amount of recovered water	Granted number of donations Number of projects authored by JSW Foundation Expenditures on rectifying mining damages in local communities Taxes and fees Donations for charity purposes regular direct meetings with local authority representatives

						Amount of coke oven gas used for energy generation purposes Amount of gas from mine methane drainage used for energy generation purposes	
2.	KGHM	Adjusted EBITDA of KGHM and KGHM INTERNATIONAL LTD Volume of electrolytic copper production from own concentrate C1 cost of KGHM Polska Miedź S.A. Net debt/EBITDA ratio for the KGHM Polska Miedź S.A. Group; LTIFR Net debt structure of the Group Net debt structure of the parent entity Increase in revenues Increase in EBITDA2 Group adjusted EBITDA2 Group revenues Group profit	Key production indicators of the KGHM Group Payable copper production by the KGHM Group Payable copper production KGHM Polska Miedź	Employment in the company Employment in the Group Response to demographic trends Training policy Training processes Workplace accidents Total Recordable Incident Rate	Continuation of R&D projects under the CuBR venture and the Implementation Doctorates Program. Advancement of initiatives related to testing EV mining machinery. Continuation of projects subsidized under the Horizon Europe Framework Program and KIC Raw Materials Activities involving intellectual property (trademarks, patents for inventions). Development of IT tools supporting management as regards R&D and Knowledge Management in the KGHM Group	Resource efficiency: Ore extraction (wet weight) per mine employee Production of electrolytic Cu per mine employee Company/metallurgical employee Maintaining Cu smelting yields	Maintaining position in WIG-ESG (previously the RESPECT Index) Maintaining its position in the FTSE4Good Index Series % of investment activity without a social dialogue policy Conclusion and maintaining of long-term contracts; achievement of a proper sales structure ensuring long-term relations with customers Sponsorship and charitable activities in building corporate social responsibility
3.	LOTOS	Total revenue Consolidated gross profit Operating result Operating result Capital expenditures in the Refining &	Number of service stations Service Areas (MOPs) Share in the domestic fuel market Crude oil and natural gas production volume	Total number of employees Total number of employees Average hours of training per employee Number of accidents	Number of undertakings producing effects in the efficiency Improvement Program Number of cost	Total consumption of crude oil Production volume Total energy consumption Total direct greenhouse gas emissions	Key social programs implemented in 2021 Number of social action projects Number of subsidies

		Marketing segment Capital expenditures in the Exploration & Production segment		involving employees	optimization projects	Primary energy consumption per ton of product Greenhouse gas emissions per ton of oil processed	awarded by the LOTOS Foundation The amount of aid contributed by the Foundation Taxes paid
4.	LPP	Equity and liabilities Amount for long-term and short-term reserves and liabilities Financial results appreciated by investors Ability to adequately remunerate employees Strengthening of the economy through, among other things, taxes and cooperation with suppliers from the region	Number of items of clothing sold annually Increased use of cotton labelled Cotton made in Africa Increased use of more sustainable materials Total floor area of all stores More innovation and better access to advanced technologies in the fashion industry Availability of products and convenience of safe shopping for customers	Number of employees of the LPP Group Suppliers on three continents Convenient working conditions for thousands of LPP employees Opportunities for employees to develop professionally and improve their skills		Raw materials used to produce fabrics and the use of natural resources, such as energy and water GJ of energy used % of green energy powering online stores Offices, distribution centres and selected stores powered by wind energy from Figene % of CO2e less greenhouse gas emissions y/y Reduction of negative environmental impacts of the industry Limiting harmful chemical substances and single-use plastics in the environment Wider choice of products that are more environmentally friendly to facilitate more responsible consumer decisions	Convenient working conditions for thousands of LPP employees Opportunities for employees to develop professionally and improve their skills Help offered to suppliers with regard to managing their environmental impacts and increasing their competitive advantage Help offered to suppliers with regard to working conditions and human rights protection Assistance for local communities and the society at large
5.	ORANGE	Revenues EBITDAaL EBITDAaL margin eCAPEX Organic Cash Flow Net income	Number of households connectable within our fibre network 4G coverage Number of B2C convergent customers	Number of employees Share of women among managers Number of training hours per year per employee		Energy consumption Own CO_2 emissions (GHG Scopes 1+2) % of renewable energy Number of recycled and refurbished devices	Number of participants (residents of small towns and villages) in educational activities

		ROCE Net debt/ EBITDAaL Divided per share (DPS)	Number of mobile SIM cards Number of mobile handset SIM cards Number of mobile pre-paid SIM cards Number of fixed retail broadband customers Number of fibre retail customers Number of fibre wholesale customers Convergence penetration in B2C fixed broadband customer base Number of fixed voice customers NPS (Net Promoter Score) Number of activations of our safety solutions	Employees satisfaction index (International Social Barometer)		Costs of repairs of damaged property Costs of restoration and relocation of property Costs of additional energy consumption Lost revenues and costs of fines and damages resulting from blackout Lost sales margins resulting from shortages and delayed deliveries	Number of participants (schools, children) in educational programmes Number of participants (children) in the Safety on the internet programmes
6.	PGE	Equity Cash Available credit lines EBITDA Capital expenditures Financial standing: long-term rating Baa1 (Moody's), BBB+ (Fitch), stable outlook	Installed electricity capacity Conventional Generation Installed electricity capacity Renewables segment Installed thermal power District Heating segment Length of distribution network Customer Satisfaction Index Connection of new customers to the district heating network Renewable energy sales offering	Number of employees Employee volunteering Management of diversity Social dialogue Total number of training days Cost of employee benefits Competence Development Centre	Research and Development Centre for Circular Economy Research and development programs Cooperation with scientific institutions	Lignite output Wind power capacity Volume of water used for generation purposes at hydropower stations CO_2 emissions Land rehabilitated R&D programs focused on environmental protection Construction of offshore wind farms with 2.5 GW capacity by 2030 Processed Combustion By-Productions %	Just Transition for mining regions PGE Group Code of Ethics in relations with counterparties Involvement in charitable activities (PGE Foundation) Sponsoring culture and sport Nurturing national identity Taxes paid Number of nstitutions supported by PGE Foundation donations Volunteer hours for community

							purposes Concept for the transition of the Bełchatów region
7.	PGNIG	Market CAP EQUITY Total assets Debt ratio (liabilities to assets ratio) (%) Debt to equity ratio (financial leverage) (%) Available funding sources: lines of credit and bond programmes Net cash from activities Revenue Consolidated operating profit (EBIT) EBITDA Net profit Earnings per share (PLN) ROE (%) Net DEBT/ EBITDA Current ratio Quick ratio Dividend per share (PLN)	Property, plant and equipment by nature Property, plant and equipment by segment Exploration and Production: tonnes crude oil and NGL production; natural gas production Trade and Storage: natural gas sales by volume; natural gas imports by volume Distribution: distributed gas by volume; estimated volume of gas fuel transmitted over the network; number of customers Generation: heat output; electricity output PGNiG's headcount by segment	% of the PGNiG Group's employees work under permanent employment contracts % of the PGNiG Group's employees are covered by collective bargaining agreements Average number of training hours per PGNiG Group employee	Digital transformation programmes R&D&I projects implemented in 2021 with the participation of the PGNiG Group Budget earmarked for R&D&I projects in 2021	Increase in direct GHG emissions Reduction in the PGNiG Group's total electricity consumption Increase in renewable electricity production at the PGNiG Group Increase in the Group's total water consumption i Increase in the total volume of wastewater generated by the PGNiG Group	Original programmes created by PGNiG and the PGNiG Foundation Scholarship programmes, Sponsors
8.	PKNORLEN	Revenue [PLNm] LIFO-based EBITDA before impairment of non-current assets* [PLNm] LIFO-based EBITDA [PLNm] LIFO effect [PLNm] EBITDA [PLNm]	Middle distillate yield – ORLEN Lietuva [%] ORLEN Group's sales volume [tt] Refining sales volume [tt] Petrochemicals sales volume [tt] Retail sales volume [tt] Upstream sales volume [tt]	Workforce [of persons] Workforce by gender Workforce by type of job Workforce by education Employees covered by collective	External and internal audits of Integrated Management System at PKN ORLEN: Internal audits [number] Audits of correct monitoring of CO2 emissions [number]	Water withdrawn by the ORLEN Group Water reused at the ORLEN Group Emissions at the ORLEN Group Ozone-depleting substances emissions Waste generated by the	Number of employees involved in Employee Volunteering Programme [number] ORLEN for Firefighters – amount of funds

		Depreciation and amortisation [PLNm] LIFO-based EBIT [PLNm] EBIT [PLNm] Net profit/(loss) [PLNm] Total assets [PLNm] Equity [PLNm] Net debt [PLNm] Net cash from operating activities [PLNm] Net cash from investing activities [PLNm] Free cash flow (FCF) [PLNm] Capital expenditure (CAPEX) [PLNm]	Net electricity generation [TWh] Number of ORLEN Group's service stations [unit] ORLEN Group's hydrocarbon production [mboe] Wells (drilled in Poland) [unit]	bargaining agreements Average training hours per employee Total number of accidents Total number of accidents at work involving ORLEN Group employees Total number of accidents at work involving ORLEN Group contractors Total number of accidents at work involving ORLEN Group employees and contractors Combined Total Recordable Rate (TRR) for employees and contractors	Audits at product vendors and service providers [number] ISCC audits [number] Energy Management System audits [number] KZR INiG system audits [number] Workforce by education	ORLEN Group Cross-border transport of hazardous waste from the ORLEN Group [Mg] Effluents discharged to the environment Environmental fees and charges Capital expenditure on environmental projects Number of complaints lodged and handled by the ORLEN Group Significant spills Volumes of biofuels used	transferred [PLNm]; number of applications submitted ; number of beneficiaries My Place on Earth – amount of funds transferred to local communities [PLNm]; applications submitted [number]; estimated number of beneficiaries [number] Scholarship programmes – grant holders [number] Children and youth in Poland covered by PKN ORLENs sports programmes [number] Vitay programme and Yanosik application points donated by customers for social causes [number]
9.	PZU	Assets Equity Subordinated bonds Assets under management for third party clients Gross written premium [KPI - strategy] Operating profit Investment income Net profit for	Number of branches Number of tied agents Number of PZU Zdrowie's own centers Numher of cooperating medical centers Position on the property insurance market Position on the life insurance market Position in terms of	Number of full time equivalents Average number of training hours per employee Percent of employees working remotely Number of employees affected by ohs training Employee	Expenditures for project activity Number of innovation centers Number of satisfaction interviews with customers Number of start-ups analyzed by PZU LAB Value of the PZU	Consumption of energy from non-renewable fuels Consumption of purchased energy Consumption of energy from non-renewable fuels Consumption of purchased energy Reduction of Scope 1	Number of volunteers Funds allocated to prevention activities Funds allocated to sponsoring activities Funds transferred to the PZU Foundation Recognition of the PZU brand Number of

		shareholders ol the parent company	revenue in the health area Position in terms of assets under management	engagement index Number of new employees Employee attrition ratio Women to men average base salary ratio	brand Number of users of the Moje PZU sales and service platform Number of active users of inPZU Rate of timely complaint handling up to 30 days	eCO2 emissions base year (2018) Reduction of Scope 2 (market-based) eCO2 emissions vs. base year (2018) Reduction of Scope 1 and 2 (market-based) eCO2 emissions vs. base year (2018) CO2 emissions offset by purchasing “Carbon Dioxide Units” offered by State Forests.	beneficiaries of the PZU Foundation Number of proprietary volunteerism projects of PZU Foundation employees Number of local projects in the area of health protection and safety improvement
10.	TAURON	Shareholder’s equity PP&E Regulatory Asset Value of Distribution area Net debt (multiple) Capital expenditures Sales revenue EBITDA EBITDA margin (%) Cash flow from operating activities Net debt/EBITDA (multiple) Net profit (loss)	Hard coal mines Coal-fired power plants; Cogeneration plants; Hydroelectric power plants; Wind power plants; Photovoltaic power plants; Cogeneration engines – de-methanation gas; (total units, installed capacity) Own district heating networks – TAURON Ciepło (length) Heat sales Electricity distribution networks (length) Transformers (distribution) Capital expenditures Depreciation Commercial coal production in segments: coal middlings, medium, coarse, eco-pea Net electricity production including RES generation Heat distribution Heat generation	Headcount Women/Men among the staff Staff with college / university degrees/ secondary school education/ vocational / primary school education Staff turnover Number of training course hours Number of the participants of TAURON Group Open University Number of training courses conducted by Internal Coaches Number of Internal Coaches Number of persons trained by Internal Coaches Number of interns/apprentices	New R&D projects launched, all business areas Ongoing projects in R&D area Total value of projects implemented R&D project finance obtained from external sources Improvement concept submissions Patent applications filed Patents granted	Number of deposits Mineral Number of coal mines Aggregate area of the mining sites Operative resources Renewable resources Non-renewable resources Emission of NOx, SO2 and other relevant chemicals to the air Total water intake [m3/year] by source in TAURON Group Total hazardous waste [Mg] by type and method of treatment	Meetings with labour unions in all subsidiaries Employees covered by collective bargaining arrangements New key and consolidated categories with special focus on financial optimisation of purchasing Regular meetings with local communities to share information on operations and their impact on the community Local and social initiatives involving TAURON Foundation Projects completed

			Electricity distribution	Number of patronage classes Number students in patronage classes Number of participants in the Development Squared initiative			in the area of Corporate Social Responsibility
11.	AZOTY	Revenue EBITDA EBITDA MARGIN EBIT NET PROFIT/(LOSS) FINANCIAL OUTLAYS Net sales and capitalization	Ongoing CapEx projects Growth CapEx Maintenance CapEx Mandatory CapEx Purchase of finished goods Other (components, major overhaul work, other)	Number of employees maintaining an unwavering commitment to employee development Amount spent on employee training and development. Developed courses of study in partnership with two universities. The Group is the largest employer in the regions where it operates. % of managerial positions were held by women Average number of training hours per employee	Investing in employee development	Azoty_1 Reduced hard coal consumption (%) Reduced sulfur dioxide emissions % Reduced carbon footprint (Scope 1 and 2) by 104 thousand Mg CO2e, or approximately 1% in relative terms Agricultural innovations Green innovations	Total donations to social causes Amount of local taxes, by category Initiatives for the protection of human health and life Support for local professional and amateur sports
12.	MBANK	ROA net ROE gross ROE net Cost / Income ratio Net interest margin Common Equity Tier 1 ratio Total capital ratio Leverage ratio Contribution of	Number of branches in Poland Number of mKiosks Payment cards in Poland The number of branches in Poland dropped by % The number of mKiosks dropped by % The number of payment cards increase by %	Staff-related expenses Number of employees Number of employed women, men Employee engagement score % of the employees work remotely Development ratio in the Employee	App users Share of mobile clients in the active client base Average trainig hours per employee Increase in the number of app users % The share of mobile	Pool of funds for renewable energy projects Emission (scope 1+2) of CO2e Fuel consumption: petrol; diesel fuel Paper consumption (A4 paper sheets) Total value of financed	Taxes and fees Number of retail clients Number of corporate clients Amount for the achievement of mFoundation's statutory goals Sales of mortgage

		business lines and segments to the financial results Capital of PLN 16,153 million* Liabilities to clients Issued debt securities Subordinated liabilities C/I % Income Net profit NPL Ratio (non-performing loans) Total Capital Ratio	The number of the mobile application's share in the sales of cash loans	Engagement Culture Survey	clients in the active client base change % The number of training hours per employee change %	renewable energy projects Reduction of CO2e emission % Reduction of fuel consumption: petrol; diesel fuel, % Reduction of paper consumption %	loans change % Sales of non-mortgage loans hange % Completed educational projects of mFundacja Funds donated to WOŚP Number of corporate and retail clients that submitted applications for PFR support through mBank
13.	BUDIMEX	Equity capital Long-term liabilities Short-term liabilities Annual sales revenues Annual net profit	Value of property, plant and equipment in PLN million Acquisition of intangible and tangible fixed assets in PLN million Number of subcontractors initially assessed	Number of employees in persons Percentage of employees hired for and undetermined time Turnover indicator in % Ratio of basic salary of women to men in % Accident frequency rate (accidents at work per 1 000 employees) in units	Intangible assets in PLN million Average number of training hours per employee Number of employees involved in innovation projects Quality Conformance indicator	Total electricity consumption in MWh per 1 million PLN of sales revenue Share of energy from renewable sources in total electricity consumption in % Scope 1+2 marked GHG emissions in MgCO2e per PLN 1 million of sales revenue Total water consumption in m3 per 1 million PLN of sales revenue	Number of environmental conflicts that would halt construction work Income tax charged from the budget in PLN thousand Value of donations in PLN thousand Number of Grant for Volunteering share units
14.	ING BSK	Equity Collected deposits Subordinated liabilities Total capital ratio % Result of processing in 2021 The cost-to-income		Headcount (persons) Turnover ratio Females in management positions Number of primary clients (thousand) Number of employees graduated from the AI	Number of development activities per employee Share of employees that took part in at least one development activity %	Power consumption (MWh) Water consumption (m3) Emissions CO2e (tonnes) Share of recycled waste % of agreements with counterparties include a	Volunteer hours Number of students in the "Professional Artist" programme Number of ING participants in the "Run Warsaw" Number of

		ratio ROE Interest expenses		Academy % of employees participated in the OHI Pulse survey in November New retail clients and new corporate clients.	Number of participants in the Internship with the Lion Number of organized webinars for clients New people joined the International Talent Programme % of cash loans sold through remote channels. % of mortgages sold with fixed rate loans	clause relating to respect for the environment % of the energy used from renewable sources Reduction of carbon emissions % Financing for RES	preventive examinations for employees as part of the oncological prevention program Financial donations. Teams applied to complete the ING Challenge in partnership with the Exempt from the Theory.
15.	BNP Paribas	Group revenues Net income Group share CET1 Ratio: Common Equity Tier 1 ratio Group's outstanding loans Net earnings per share Net dividend per share Liquidity reserve Net book value per share Net dividend per share Pay out ratio cash Share price	Number of connections monthly to mobile apps Number of contacts per month Number of individual, business, institutional customers Number of points of sale	Number of employees according to business lines Changes in workforce (Full Time Equivalent) Number of permanent contracts Proportion of open positions filled by internal candidates Percentage of employees trained on an ethics and conduct related issue Percentage of employees with disabilities Percentage of women in the population in key SMP (Senior Management Positions) Share of women in the Group's total workforce	Two differentiated service models Technology for smoother account openings Digital solution dedicated to clients who are self-employed eco-responsible credit cards	Amount of assets under management considered sustainable	Taxes paid Budget for the Group's corporate philanthropy Budget committed by BNP Paribas for its own account investments in favour of the ecological transition, biodiversity, local development and positive social impact Worldwide position in sustainable bonds Position in euro denominated sustainable bonds

				Gender equality index Number of collective agreements signed			
16.	BOGDANKA	Return on Equity (ROE) Return on assets (ROA) EBITDA margin	Annual production volume CAPEX* [PLN million] Average annual expenditures on fixed assets under construction Own annual consumption of coal (Enea Group) Market share of coal for the commercial power sector	Number of persons employed under employment contracts Number of persons under a contract other than an employment contract with the company Employee turnover Average number of training hours by gender and employment category Average number of training hours by gender and employment category Work-related injuries	Selected research and development projects	Recoverable reserves Electricity consumption Water withdrawal by source and type Total water at all locations, due to the destination of the discharge Gross volume of direct greenhouse gas emissions in metric tons of CO 2 equivalent	Membership of associations Treatment and rehabilitation Purchase of medical equipment Subsidies for education and health care Donations Sponsorship and promotion: Promotion; Sports sponsorship; Social and cultural sponsorship
17.	PEKABEX	Total assets Short-term receivables Cash and cash equivalents: Equity Long-term liabilities Short-term liabilities Sales revenue EBITDA Net profit Net debt Maximum guarantee limits available Insurance	Capital expenditures in tangible and intangible assets Total production volume generated by 6 production plants Production volumes by month	Number of jobs (employees and associates) Number of foreign employees Training expenditure Expenditure on training for the implementation of the new ERP-type system Number of apprentices and trainees Co-financing of events important for employees	Development and implementation of the "Pekabex® Residential Buildings System" and the "Pekabex® Hall System" Filed invention with the Patent Office Utility model protection rights and patents.	Number of educational and information campaigns under the "Pekabex Goes Green" slogan The share of investments in the BREEAM/LEED standard in the Group's operating revenue	Support for Ukrainian workers and their families. Support for local initiatives Amount paid in property tax
18.	TIM	Equity capital Long-term liabilities Short-term liabilities	Number of sales offices in Poland Number of TIM store	Number of employees Number of new employees		Non reusable materials usage Energy consumption	Number of new employees engaged in CSR activities

		Annual sales revenues Annual net profit Net cash flow EPS EBITDA margin ROA ROE Current ratio Liquidity ratio Profitability ratios Debt ratios Turnover ratios	Online Capex expenditures Opex	Share of women among employees Employees turnover Average hours of training per employee Financing of employees education Employee Net Promoter Score Number of persons working for the company under a contract		Total greenhouse gas emissions	Number of partners cooperating in SCR activities Total expenditures supporting culture, sport and charities
19.	PSE	Net revenues on sales Other operating revenues Financial revenues Operating expenses Financial expenses Net profit Total assets EBITDA TAX EBITD ROE (net profit/equity)	Total length of transmission lines Number of transmission lines Number of transmission service agreements Total capacity of new generating sources with valid connection agreements Number of extra-high voltage substations % of electricity supply continuity index % of failure-free functioning of the balancing market Number of balancing market participants in 2021 Overview of cross-border exchange transmission capacity offered by PSE Average Interruption Time for all planned and unplanned outages. Percent of availability of transmission equipment	Number of PSE employees Number of employees by gender Total number of new hires: by gender, by age groups Total number of leavers: by gender, by age groups Total number of employees by duration of employment gender and region Number of employees by work time: Full-time, Part-time Total number of training hours by gender Average number of training hours by gender Employment structure Percentage of	Number of research and development works Expenditures incurred for research and development	Total greenhouse gas emissions Carbon footprints Total weight of waste by type of waste and disposal method Total number and volume of major leakages Total amount of wastewater Wastewater treatment method: By the organization, By wastewater treatment plant Total water consumption by source Monetary value of fines and total number of non-financial sanctions for non-compliance with environmental laws and regulations	Taxes and charges Community investments Payments to state institutions % of the fee transferred to PSE for transmission services included in the bills of residential electricity customers % of employees took advantage of benefits related to subsidizing holidays Total value donated by PSE for social actions Number of beneficiaries-entities that benefited from PSE's social support % of employees took advantage of health care benefits Subsidizing sports,

				employees subject to regular job quality assessments and career development reviews by gender Percentage of employees eligible for retirement within the next 5 and 10 years Remuneration, social insurance and other benefits			recreational and educational activities Value of the Total Recordable Incident Rate
20.	Totalizator Sporiowy	Total revenues Operating expenses	Number of points of sale Gaming arcades Online channel	Number of employees by contracts and gender Employees turnover Total number of new employees by gender, by age groups	Number of employees participating in training		Share of financing: Physical Culture Development Fund – 75%, Culture Promotion Fund – 20%, Civil Society Development Fund – 4%, Gambling Problem Solving Fund – 1%
21.	GPW	Net profit EBITDA Revenue EBITDA margin (EBITDA/Sales revenue) Operating profit margin (Operating profit/Sales revenue) Return on equity (ROE) (Net profit for last 12 months/Average equity at the beginning and at the end of the 12-month period) Debt to equity (Lease		Costs of employee benefits (personnel costs and other personnel costs) A range of training programmes, including organising remote work, protecting mental wellbeing during the pandemic. Gender of persons employed Employees with a seniority of more than 10 years Training hours per	Continuation of research and development work on a proprietary Trading Platform and other technological tools. Launch of a new edition of the prestigious training programme GPW Growth A new edition of the Analytical Coverage Support Programme 3.0. Further development of the product	The GPW Group's consumption of resources » electricity, associated emissions of CO2e » thermal energy, emissions of CO2e » water » fuel » A4 sheets	IPO Optimisation project » Annual fee reduction in response to the difficult situation of Issuers due to the COVID pandemic » Industry conferences including the GPW Innovation Day Gaming on the Stock Exchange, Business in the Genes, Trigon Green Tech

		liabilities and liabilities under bond issue/Equity) Cost / income (GPW Group operating expenses / GPW Group sales revenue (for a 12-month period))		employee on average Employee turnover Participants of the GPW Foundation's flagship educational project, the Online School Exchange Game GPW Group Scope 1 emissions	offering Update of the "Best Practice of GPW Listed Companies" Publication of the "ESG Reporting Guidelines". Adoption of the GPW Group's ESG Strategy 2025.		Conference, Three Seas Stock Exchanges conference Public consultations on interest rate benchmarks Publication of the ESG reporting guidelines, workshops on ESG reporting Taxes paid to the State Treasury
22.	Unibep	Net revenue from sales Net profit Cash EBITDA Capitalisation on the WSE Sales value	Modular house factory capacity Number and total area of bitumen plants (% increase in the sq.m. of manufactured modules Total bitumen production in Mg	Number of employees Number of women Number of men Turnover frequency in the Unibep Group		Energy consumption within the organisation Total weight of waste generated at Unibep S.A.	**% of** employment growth at Unibep S.A.
23.	PEKAO	Net interest income Net commission income Balance sheet total Amount of equity Total liabilities	Total number of establishments / locations (outlets, points, etc.) by: retail and private banking; business banking; corporate and investment banking	Total number of employees (in persons) by: retail and private banking; business banking; corporate and investment banking Number of training hours per employee Total number of training hours by employee category Average number of training hours per employee by job level	Cooperation with universities	Electricity purchased for consumption purposes Electricity purchased while working remotely Thermal energy generated by the organization (natural gas) Thermal energy purchased for consumption purposes Total energy consumption within the organization Paper consumption Waste Carbon footprint	Culture support, including donation to the Royal Castle Sports Support, including Sponsorship of the Polish Basketball League Sponsorship of the PEKAO Szczecin Open tennis tournament Support for charitable institutions Support for public benefit

							organizations Support for social organizations, including Support for the protection of bison species Media support Support for trade unions
24.	Famur (Grenevia)	Revenue Operating profit Net profit Current assets Non-current assets Total assets Current liabilities Non-current liabilities Equity Rate of return Price per share	Order intake PLNm Production plants Service centres	Percentage of employees covered by collective bargaining agreements Average hours of training by gender and employee category New hires and employee turnover FAMUR Group total headcount Percentage of employees by employee category Severity and frequency rates of accidents, injuries, occupational diseases, days lost, and total number of work-related fatalities		Consumption of utilities, volumes of emissions and waste generated Greenhouse gas emissions Proportion of revenue, capital expenditure and operating expenditure associated with environmentally sustainable activities	Charitable donations (PLNm) Employee engagement in corporate social initiatives Collaboration with schools and universities